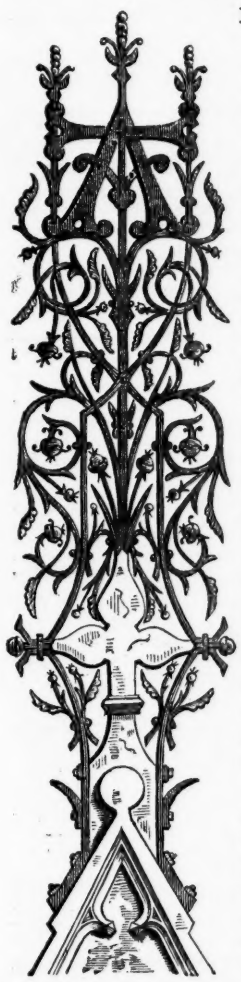
The Builder.

VOL. XXI.—No. 1045.

Akroydon. Improved Dwellings for the Working Classes.



AMONG the many recent movements having for their object the welfare of the working classes, we believe none to be more important or more essentially practical in its aims than that which begins by providing wholesome dwelling-places for working-men. And this is the case both because the development and encouragement of home influence and home ties are to the last essential, and because without our having yet fully recognized it, yet undoubtedly, healthy well-drained houses, well-ventilated living and sleeping apartments, with enough of both, lie at the very foundation of the possibility of health, happiness, and morality, and therefore of success.

Up to within comparatively recent times the efforts of philanthropists have been directed more towards the amelioration of great social evils than towards the prevention of them; in curing the sick man rather than to keeping him in health; in rendering him assistance when he is irretrievably a pauper instead of extending the helping hand which would prevent his ever becoming a pauper. There is no scarcity of hospitals and workhouses; and society seems to have been better satisfied with the reparation of its own neglect, under the garb of charity, than conscious of its duties and its interest in promoting health and solvency as acts of common justice. We have had to deal with disease and poverty in a manner which has been more flattering to our philanthropy than creditable to our common sense; and the delusion seems to have fast hold of us, that hospitals, workhouses, gaols, lunatic asylums, and reformatories are more satisfactory institutions than that which would to a great degree render them unnecessary,—healthy houses and the encouragement of co-operation and self-reliance.

It is to be regarded, therefore, as a most hopeful sign, that though social science is yet in its infancy as a science, its juvenile experiments should be in the opposite direction to bygone philanthropy, and tend to prevention rather than to cure.

Necessarily many of the objects proposed to be attained by the diffusion and operation of social science will only be achieved by the results gained through many experiments, some of which must be unsuccessful. If, however, there is one means by which poverty, disease, and misery may be successfully combated, and a most admirable spirit of self-reliance created; if in effect there is one movement which lays the foundation for all social improvements among the working classes and may therefore be pronounced to be one of the *successful* efforts of social science, it is that movement which undertakes to provide "improved dwellings for the working classes." For with improved and healthy dwellings all other social movements towards improvement are possible,—without them, impossible. We do not think, therefore, we are overrating the importance of the movement, if it be conceded to be what we claim it to be,—the commencement of the possibility of others, which are perhaps equally good, but not of equal importance.

The building of model cottages is not an experiment of very recent origin. In one form or another it has been tried, both by individuals and associations, in many parts of the kingdom. Societies have offered prizes for designs, and architects have not been backward in preparing designs for various descriptions of model cottages. The object hitherto seems to have been confined to the production of well-arranged houses, having a sufficiency of accommodation, and paying a fair return on money invested in them. Commercially speaking, these experiments have not been uniformly, or even generally, successful; and this has operated very materially against the adoption of model cottage-building as an investment. Much good, however, has been done by directing attention to the subject of the dwellings of the working classes, and the recognition of the need for improvement in them. How this improvement is to be brought about will depend very much on the circumstances of the various localities in which experiments may be tried. The value of land, and the demand for labour in any one place, will necessarily govern both the extent and character of any proposed experiment for the improvement of working men's dwellings. Thus, in London, the model lodging-house, or the collection of model dwelling-places for families in a block of buildings many stories in height, is the form the experiment assumes, consequent on the great value of land, and the diversity of occupations of the various tenants. But in the great provincial towns, where land is usually not so valuable, and where extensive factories give employment to large numbers of workmen engaged in similar occupation, it is possible to give a more independent character to the dwellings, by building cottages or houses not connected with each other, except by being placed in rows or terraces. Each house may then become a freehold tenement, which cannot so easily be the case when many suites of rooms are together under one roof, as in London. We propose to give an account of the scheme for improving the dwellings of working men which bears the name at the head of this article.

The scheme of AKROYDON originated with Mr. Edward Akroyd, a gentleman of well-known public spirit in Yorkshire, residing at Halifax, where his extensive factories are situate. The founder of Haley Hill Church, one of the finest as well as one of the most costly of modern ecclesiastical structures, Mr. Akroyd desired to see an improvement not only in the arrangement of the interiors of working men's dwellings, but some regard also paid to the character of their external appearance.

Ten years ago, Mr. Akroyd and his brother built a village of 112 houses, for the accommodation of the workmen in the Copley Mills, of which the Messrs. Akroyd were proprietors. These houses were built for the double purpose of offering house accommodation to the large body of workmen employed in the mills, and in order also to give them well-constructed and well-ventilated dwellings, possessing superior arrangements and conveniences to those common in the neighbourhood. The cost of each house varied from 120*l.* to 90*l.*, and they were let at rentals varying from 5*l.* 15*s.* to 4*l.* per annum. Of the whole village of Copley, Mr. Akroyd is still the proprietor; and this experiment may be looked upon as an ordinary investment, bearing an interest of 4½ per cent. The houses are built on the back-to-back system, or what are called double houses; and this, one of the most pernicious principles of house building, is the greatest social and sanitary drawback to the otherwise successful character of the dwellings. There can be no apology for back-to-back houses; and though it is one of the common features of the country in this neighbourhood, we believe strong efforts are now being made to put a stop to the practice. Its adoption in this case seems to have been from the desire to bring the rentals within the necessary limits of the workmen's incomes; though even from this aspect we are convinced it is false economy thus to build. It may possibly enable the proprietor of such tenements (for we cannot call them houses, properly) to obtain an additional ¼ or ½ per cent. interest on the outlay more than would be derived from the erection of thorough independent houses, with a communication back and front, and with the possibility of ventilation: but some of the health thus lost, some of the feelings of privacy and delicacy thus destroyed, will bear their fruits; and in the form of taxes and rates and subscriptions, the grudging landlord will have to disgorge his extra per-centage, with compound interest, for his participation in the origin of crime, disease, and pauperism. In these remarks we do not specially refer to Copley, for the houses at this village are by far the best examples of the class that can be found perhaps in Yorkshire. Here, too, if anywhere, on the open country, it is possible to have such dwellings,—for here is fresh air to be had by opening the windows. The fair test of the system is to be found in the lowest parts of a manufacturing town, where every foot of ground is valuable, and where the factory smoke pollutes the air, and the dyehouses poison the streams; where streets cannot well be described than as canals in wet weather, and the tracks of simooms in dry weather; where it is difficult to get air at all, and impossible to get it untainted by the chimneys and the sewers; where the refuse of a thickly-populated district lies rotting on the open streets, and the gutters do duty for more than surface drainage. In such a place—and there are many—what must it be *never* to have a draught of air through the house? The Registrar-General can tell us: the record of infant mortality is a fair gauge. At Leeds, for instance, where this system of half-houses is the most common, the people have been said to succeed in everything but in making health; and it has been asserted that the rates of mortality are higher than can be accounted for, except by the explanation that the people are cannibals, and live upon each other as surely as if they eat one another.

We must, however, return to the subject of Akroydon.

With a view of improving the character of dwellings for working men in the district of Haley-hill, Halifax, Mr. Akroyd purchased, in the year 1855, a considerable plot of land, upon which he designed to build a small town, having, for its prime characteristics, beauty of architecture; a combination of all the improvements in arrangements evolved by the progress of sanitary science; and a town in which every inhabitant was his own landlord, living in his own freehold; and lastly, that these freeholders should be working men. For political purposes many working men in Halifax had already become freeholders; building houses with the assistance of the Halifax Union Building Society, who advanced three-fourths of the capital. The houses thus built, though inferior in construction and character, have so improved in value as to be worth, in some instances, nearly double what they have cost to their proprietors.

Making use of this experience, it was determined to build the new town in connexion with a local society called the Halifax Permanent Benefit Building Society. Plans were obtained from Mr. Scott; the character and style of the buildings were determined; and a local architect, Mr. W. H. Crossland, became the acting architect to the scheme, furnishing designs and carrying out the

propositions of Mr. Scott, whose pupil he seems to have been. Some delay occurred in the preliminaries, but designs were at last submitted to a meeting of proposed shareholders, in June, 1860. They were well received, and immediate steps were taken to form the Akroydan Building Association, in connexion with the last-named society. We will let Mr. Akroyd describe for himself the motives which led him to embark in the scheme, as stated by him in a paper read before the last meeting of the Social Science Congress in London. At this meeting of proposed shareholders, in June, 1860, "It was stated to the meeting that the object of the promoter was not only the improvement of their dwellings in a sanitary point of view, but also to awaken the innate taste of the people for the beautiful in outline: he therefore stipulated that the block plan (as furnished by his architect) should be strictly adhered to, and that the design should be Gothic, simple, yet bold in detail. On these conditions he undertook to provide plans, to defray all expenses connected with the contracts and supervision, and to guarantee the fulfilment of the contract within the estimate, provided there was no deviation from the contractor's plans; or otherwise that the cost of any such deviation should be paid to the contractor by the party requiring it, and at his sole cost."

Upon this understanding, in March, 1861, the contractor commenced operations for building two blocks, eighteen houses in all; and, with those now nearly built, four blocks, containing thirty-one houses, have been erected. They are of two classes. The first and less costly house contains on the basement — wash-kitchen, coal-cellar; ground-floor—living-room, 15 feet by 13 feet, small scullery; first-floor—bed-room, 15 feet by 11 feet, and bed-room, 11 feet by 6 feet. A yard at the back, 18 feet 6 inches by 12 feet, contains closet and ashpit. The guaranteed cost to the shareholders of these was 130*l.* each.

The second and better class contain on the basement—cellar, 18 feet by 16 feet, larder, 10 feet by 7 feet, coal-cellar; ground-floor—parlour, 15 feet by 12 feet, kitchen, 9 feet by 13 feet 6 inches; first-floor — bedroom 15 feet by 10 feet, ditto 13 feet 6 inches by 9 feet, ditto 8 feet by 9 feet. A small yard at the back contains closet and ash-pit. The guaranteed cost to the proprietors of these houses was 190*l.*

The blocks last built are of a somewhat more expensive kind, two houses in them costing 300*l.* each, four 150*l.* each, and six 210*l.* each.

The whole are supplied with water and gas; are thoroughly drained with sanitary tubes; and each has a separate back and front entrance. Externally the blocks already built are pleasing in design, of the Domestic Gothic very frequent in the older houses in the neighbourhood, some of which date back two hundred years. The material used is the stone of the neighbourhood, which is both good and plentiful, with blue slate roofs.

The dressings to windows, doors, strings, and quoins, are out of the fine sandstone from the quarries at Ringby, on the hill just above. It is of a very soft warm tone, and harmonizes well with the intermediate external face-walling, which is composed of Northouram wall-stones, of a bright grey colour. These wall-stones are made out of the flat stone of the district, and vary in thickness from 2 inches upwards, and are cut out of the same beds as the best flags and landings. They are walled as they are delivered at the quarry: no labour is used in dressing them.

The internal walling is composed of inside par-points and bricks. Where economy of space is required, bricks are used; the whole built in mortar. The outside walls are 21 inches thick below the ground line, and 18 inches thick above.

The roofs are covered with Bangor duchess slates, nailed with copper nails to 1½-inch deal laths. The ridge tile at present used is a Staffordshire roll one, but it is proposed to alter the form and material of them. The valley gutters and flushings are all of lead.

The fixtures provided in the houses are, for the single ones, an oven and boiler, a pan for washing or brewing, a cast chamber fire-place and mantel-shelf, a sink in cellar, and one in the small scullery, foot of stairs, a large cupboard with folding-doors, and set of drawers under. The double houses have, in nearly all cases, two ovens and boilers, one in the back scullery, level with the living-room, and one in the cellar kitchen, with a pan for washing.

Papering and gas-fitting have been left to the option of the owners. The walls have all been plastered.

No wood was originally painted except the external doors; simply stained and varnished.

Mr. Akroyd is very strong in his idea of not placing all houses of one class together. He rather desires to carry out as much as possible his original scheme of mixing individuals of various grades in one community, so that the better paid and better educated might act usefully on the desires and tastes of others in an inferior social position. This has been followed in Mr. Crossley's proposed scheme, the houses being of four values, 250*l.*, 170*l.*, 140*l.*, 100*l.*

Mr. Akroyd is very desirous of keeping up the old English notion of a village—the squire and parson, as the head and the centre of all progress and good fellowship; then the tenant-farmers; and lastly, the working population.

In examining the houses already built, we were particularly struck by the singular air of neatness both in the interior and exterior, testifying to the pride which the proprietors evidently felt in living in and taking care of their own houses. In the more expensive of the two, the parlours were models of neatness and comfort, furnished in a manner which we venture to say is scarcely known in the houses of artisans in the south of England. From the completeness of the internal arrangements, and the thoroughness with which the houses seem to have been built, the whole appear eminently successful; whilst the occupants are evidently proud of their homes. One feature we were particularly pleased with. Over the doorway, on the keystone of each house, the owner's initials are carved as a monogram, which helps to give an individuality of ownership to each proprietor, and is also ornamental in appearance.

It was intended to add a more picturesque appearance to the houses by the use of dormer windows; but this the owners objected to, supposing it would tend to give the character of almshouses to their freeholds; and though the point of allowing the style to be Gothic was conceded with some reluctance to Mr. Akroyd, the idea of the eleemosynary effect of the dormers could not be overcome, and this part of the design was relinquished.

We have misgivings on the subject of cutting up the available living space into two rooms, as the better classed among the houses are planned. Practically, the working classes live in the smaller and keep the larger and better room for "Sunday best," inhabiting it only occasionally. Two fires will not be kept up in a poor man's house; and therefore during the winter months the best room or parlour is to all purposes closed, whilst the family is compelled to inhabit the much smaller room, or kitchen,—often too small to hold them all without great inconvenience. For this reason we prefer the cheaper of the two classes (excepting as to the bed-rooms), which gives a large healthy dwelling-room, and a small scullery *without a firep'ace.* If a better class of house be required for the higher grades of artisan, we should strongly recommend the large room to be provided with the range for cooking, and otherwise so planned, that the inhabitants will of necessity live in the healthier room, and keep the smaller for occ sional or Sunday use. Inasmuch as both classes of house have a kitchen with set pot and sink, arranged for washing and other purposes, we can see no urgent need for two fire-places on the dwelling-floor; unless, as before stated, it be for those who can afford a withdrawing-room. The more there are of the latter among our skilled artisans the better, for more gifted workmen have been driven from their own homes to places of less profitable resort, through the want of a quiet room in their own houses, than perhaps by any other circumstance. But there are a vast number of working men whose wages are such as will always prevent their having such a luxury; and these are the most in need of healthy homes and assistance in procuring them.

It is, however, absolutely necessary, even in those houses which contain only one large living-room and pantry, or scullery, on the ground-floor, that three bedrooms should be provided on the chamber-floor. In the majority of poor men's families there will be both boys and girls of an age which makes it indelicate that they should occupy the same bedroom; and when, to obviate this recognized evil, the girls or boys are provided for in their parents' room, the indelicacy is scarcely lessened, whilst the injurious effect on the health of the children is increased. We can see no reason why the parents' sleeping-room should be so much larger than the others. Wooden partitions would be a sufficient screen for dividing the space above the large living-room into two bedrooms, leaving space for a third over the scullery and stairs. It would be, perhaps, advisable to construct the wooden screen to be removable, if when the family became less, it should be desired to convert two into one large bedroom.

Let it be understood that it is necessary to cultivate moral as well as physical health, as influences constantly and mutually reacting; together forming the mainspring of happiness, the possibility of prosperity, and the basis of civilization.

We cannot forbear noticing, for the benefit of our artisan readers, the method by which the inhabitants of Akroydon become their own landlords; this being the distinguishing feature of the scheme, from other model cottage schemes previously originated.

Referring again to Mr. Akroyd's paper we extract some information. Mr. Akroyd says,—

"The chief advantages which the Society affords are held out to parties building their own dwellings. Every builder or purchaser of property must provide one-fourth of the purchase-money, the Society generally lending three-fourths. We will assume a case in which the cost of the building shall be 160*l.*, and the rental equal to 7 per cent. on the outlay: the following will be the result upon the scale of the Halifax Society:—

Subscription on *two* shares of 60*l.* each at 5*s.* per week, or 13*l.* per annum for twelve years and one month	£156	3	6
Deposit money of the one-fourth of purchase-money	40	0	0
	£196	3	6
Rental of property at 7 per cent., or 11*l.* 4*s.* per annum for twelve years and one month, gives (which the member will save)	£135	6	8
Net outlay (exclusive of interest on deposit)	£60	16	10

This case shows that a property of the value of 160*l.* may be obtained for the sum of 60*l.* 10*s.* 10*d.*, exclusive of interest on the member's deposit.

Or put the case in another light, and supposing the member elect to be living in a house for which he pays 10*l.* per annum rental, or 4*s.* per week. By joining the Association and paying 5*s.* per week besides his deposit—that is, 1*s.* per week more than what he actually pays for rental—in twelve years and one month he will become the owner of the dwelling-house and constitute himself his own landlord; and in the event of being obliged to discontinue his subscriptions from lack of work or other cause, he may transfer or sell his share; or in the event of the death of a subscribing member, his widow or family will have the same facility for disposing of the share.

His account with the Society will stand thus:—

Received from Society.

Purchase-money	£160	0	0
Add interest on same for twelve years and one month	36	3	6
	£196	3	6

Paid Society.

Subscriptions on two shares for twelve years and one month	£156	3	6
Paid deposit (exclusive of interest)	40	0	0
	£196	3	6

Such are the advantages held out by the Benefit Building Society; and such, we may add, are held out by almost all building societies, *without being generally made use of by the working classes.* It requires something besides the mere offer of such advantages to induce working men to take active steps to secure the assistance proffered, for the provision of 40*l.* as a commencement would be an insuperable difficulty with the majority. The technical knowledge which would be requisite in the subscriber who intended building himself a house would be a rare thing in a working man. Moreover, the artisan himself is not the best judge of what is really required for a healthy, well-planned house; otherwise we might not so often have to complain of their scarcity. It required something more than the offer of assistance from the Building Society at Halifax, and this something, and the controlling power also, were furnished by Mr. Akroyd, who further states that the additional benefits conferred by the Akroydon Building Association are,—

"First. A favourable site on easy terms through the landowner and promoter, besides uniformity of style, and a protection against the depreciation which the purchaser of a good house often sustains by the juxta-position of an inferior building. Moreover, the sites of the various blocks are carefully apportioned, and a complete main drainage is established.

Second. The attainment of *the chief and primary object* by the erection of a better class of workmen's cottages than can be secured through the ordinary channels of building speculation, such cottages being designed by a selected architect, subject to the approval of the committee of the Building Association. By employing an efficient clerk of works, Mr. Johnston, to look after the contractors, care is taken that the work shall be *well* and *substantially executed*, and that the contract be faithfully adhered to. *These are especially the points* on which a *working man wants help*, because he can understand but little of an architect's plans and details; and whatever knowledge he may have of the contractor's work, his influence and control will be very slight.

Third. Assistance in raising the deposit of 40*l.*, or one-fourth of the purchase money required. This sum may be as far out of the reach of the member as the whole amount for which he subscribes. To eligible members, unable to pay down the required one-fourth, I guarantee the deposit of 40*l.* to the Benefit Building Society, who, with such security, are willing to forego the prepayment

of the deposit, and instead thereof to increase the scale of weekly payments to 6s. 9d. Of course my guarantee will cease when one-fourth deposit money has been paid in by these instalments,—say in three years. The deposit might be met in *another manner:* by each non-deposit member entering himself as a subscriber at the usual weekly rate of 2s. 6d. per share per week for three years before the money is borrowed from the Benefit Building Society, and by that time he will have accumulated the requisite deposit. Under this arrangement the building might be commenced during the third year of subscription, and be completed when the loan is made and the house ready for entry."

In addition to this, Mr. Akroyd gives the land required for the main streets, more for the purpose of initiating so valuable a movement than from any desire to more nearly identify himself with the scheme. He suggests that in all large and populous towns committees should form themselves, composed of those who desire to help and work *with* the working men, and not only *for* them; first purchasing sites in the most likely situations, and then, in co-operation with local building societies, enable working men to achieve their own independence; adding that, should the promoters who wish well to the working man derive no profit, but experience a loss in their efforts, yet "*in no other way can the same benefits be conferred on working men at so slight a loss,*—benefits which *entail no degradation and wound no self-respect, but, on the contrary, confer independence,* whilst *the achievement of the independence constitutes a* HABIT *of saving most useful in after-life.*"

How Mr. Akroyd's sensible method of proceeding has been met in a kindred spirit by the workmen of Halifax, we shall show by a quotation from the annual report of the committee of the Akroydon Building Association, dated August, 1862. After referring to the satisfactory condition of the scheme financially, the committee report:—"We may advert with peculiar satisfaction to the erection of a handsome building for a co-operative store at Akroydon. This store will be a great convenience to our resident members; and as the embodiment of the accumulated savings of working men, it will be admirably in keeping with the objects of the Association. [Our engraving illustrates the store referred to, and also two of the better class houses, with some of the cheaper houses in perspective to the left.*] Regarding the question of the cost of the houses, we may observe that, from the first, we have had no desire to provide 'cheap' houses according to the popular acceptation of the word; for a 'cheap' house, like any other cheap article, is in the end proverbially dear. Our principal aim has been to erect, on the most advantageous terms, good, substantial, healthy, and comfortable houses, replete with every requisite convenience. We have sought to improve the home of the working man, and by improving his home to improve his health, his habits, his tastes, and his character, and altogether to raise him in the social scale; and in these respects we think the houses already built are evidence that our efforts have not been entirely fruitless.

Let us, then, continue to vie with each other in advocating the interests of the Association. Let us never cease in our endeavours to obtain new members; and as time rolls on, we shall have the satisfaction of beholding homesteads springing up thickly around us, and be the means of establishing at Akroydon a community of working men frugal and industrious, contented and happy."

We think that our readers will concur with us in wishing the committee a hearty "God speed" in their endeavours. We cannot refrain from expressing our admiration for the promoter of the scheme and for the working men themselves who are carrying it out. The conduct of both is well worthy of imitation, and will undoubtedly be followed by similar efforts in other parts of the country. Already it is bearing fruits in the formation of a similar association in Leeds, to whose operations we have from time to time briefly referred, and to which we may at some future time devote a separate notice.

Two lessons may be learned from Akroydon. The first is, that men of wealth and intelligence, by the sacrifice of a portion of their time, and by the temporary loan of small sums to deserving working men, may enable them to begin habits of thrift and economy which will eventually raise them in the social scale. By initiating such movements, and remaining to succour them whilst they are yet experimental, infusing into them the weight which position and influence always bestow, and so controlling them that nothing is done which will need to be undone; by such conduct, our public men may confer benefits on working men that will be as permanent as they are beneficial.

* See pp. 116 and 117.

The other lesson is, that working men are both worthy and willing to assist in their own social elevation by the exercise of self-denial and forethought. Too often are well-intended schemes met by the assertion, that the working classes cannot appreciate such luxuries as cleanliness and ventilation, and will not deny themselves sufficiently to allow any general improvement in their ranks. Here, however, is a positive and practical denial to the theory.

THE METROPOLITAN (UNDERGROUND) RAILWAY.

THE Metropolitan (Underground) Railway, of which we gave a full account on the day of its opening,* and before, has been in working five weeks; and if the traffic, and a consequent great rise in value of the shares, are to be regarded, we did not devote more space to its description than the subject in its relation to metropolitan communications, justified and demanded. We have not in the interval, referred to certain reported defects in the working, and even in the design and arrangement, of the railway; but we might have been expected not to be indifferent to the reports, which in some journals have gone to the length of asserting that entire reconstruction of the main length of the tunnel, with the underground stations, would be necessary. An inspection of the line during the last few days however, has satisfied us that such defects as may be found, can be very soon rectified. As we have shown, this particular line can be of inestimable service as an example; and in the way of provision of new localities for habitations, by placing those districts in speedy communication with quarters in which it is and would be impossible to find or provide the places of residence under desired conditions. The Metropolitan Railway is already suggesting many other schemes. Some of these however, as not having the advantage of a line like that of the northern boulevard of our metropolis, will involve large outlay in property, added to their own difficulties of construction.

The right principle of plan to serve at one and the same time many objects of business and sanitation, is unquestionably that of an open line, like portions of the London and Birmingham, and the West End railways entering the metropolis, and in accordance with the original proposition of Mr. Pearson for Farringdon-street. Notwithstanding the existence of a Metropolitan Board of Works, the planning and regulation of London improvements are yet far from the perfection of which they are capable, even making no allusion to the decorative effect of our streets; but were the preliminaries of design properly regarded and attended to, lines of railway communication between different parts of the metropolis would originate with the authority which is charged with all works of street-improvement. Several objects might then be attained at once. At present, there is great waste of money and force, and often postponement indefinitely of one of the objects. Under a proper system, a speedy communication between two quarters of the town being needed,—and wherein steam-power could be used with advantage,—the necessary breadth of cutting through houses would be made for the railway, and for street-way in addition, on each side of it, the railway on the lower level, and the other ways on the regular level of other streets. Thus, very lofty houses could be built, which would peculiarly be free from the disadvantages which, owing to the value of ground, it is very difficult otherwise to escape, even where the boulevards are as wide as are those of new Paris,—in which capital, the connexion of the railways to one another has been unaccountably left imperfect, however not forgetting that there is the girdle line, *chemin de fer de ceinture,* and that in the street-routes, facility of passage between station and station has been the key-note; and channels for the aëration of a thickly populated town like London, would be established, such as otherwise would not exist, except along the course of the river, and of which the value would be found in diminished mortality.

In our former article, we thought fit to allude to the necessity of not overworking the staff of the Metropolitan Railway; and we felt the importance of running a greater number of trains. In effect, the company, or that of the Great Western Railway who work the line, were quite unprepared for the amount of traffic which there was in the first few days; and even yet, especially on Sundays, their arrangements are tasked to too great an extent. About 36,000 tickets, some of them returns, were issued on the opening day; and in the three first days, over 100,000 persons travelled. The traffic of the first three weeks amounted to the daily average of 29,196 passengers, and the receipts to 346*l.* per day. The receipts for passengers only, on the first two days were 843*l.*; and in the week following, they were 2,306*l.*, being at the rate of 615*l.* per mile per week. It has been estimated that the receipts, without the Great Northern traffic, and other resources, which will come into the account in a few weeks, may be taken at 32,812*l.* per mile per annum. The cost of the whole undertaking up to the present time, has been 1,329,296*l.* One account makes the number of passengers on a Sunday, 38,000. For such an amount of traffic, the number of engines brought into use by the Great Western Company, by no means sufficed; and there were some defects in the construction of the engines, though not more serious than might be looked for in machinery of any new kind subjected to a severe test.

The steam from an engine must be either condensed or allowed to escape: otherwise there would be explosion. We stated in our former article, that the locomotives on the Metropolitan Railway were provided with condensers. By this arrangement, and that of the dampers, it was expected that so far as the subterranean portion of the line was concerned, all escape of steam could be rendered unnecessary, and that the gases of combustion would not have any outlet. However, owing to several causes, as deficiency of engines constructed, or at least brought into use; to the stoppages at intermediate stations, which, for many of the trains, are not necessary; to insufficient speed in the transit, or delay at the stations,—some of which defects have now been remedied; to the inadequacy of the condensers, and some other details of the engines, for their work; and to the bad quality of the coke used by the Great Western Company; the porters and others obliged to remain at the underground stations during long hours, have suffered severely. Passengers, at present, may travel from one end of the line to the other without the slightest perceptible inconvenience; but both at Baker-street and Portland-road, light smoke after the passage of a train, and a constant sulphurous smell, are noticeable; though they are not so bad as they were, when some of the porters who had been ten or twelve hours in the impure atmosphere fainted. It has been calculated that each locomotive had 30 per cent. more work than it could do well: the condensers therefore did not absorb the extra 30 per cent. of steam; and the cylinders, which in any case must be severely tried, have had some of their attachments forced off; and further, they seem to require, in parts, a modification in the material. By improvement in the condensing apparatus and in the dampers, it is hoped that the inconvenience at the stations may be done away with. Meanwhile, however, there are several proposals for the construction of engines to dispense with all fuel of the nature of coal or coke,—some of them proposing to heat the water by the combustion of gas. Should these different improvements not supply a *complete* remedy for the evil, we suppose it would not be difficult to perfect a contrivance for drawing off accumulated gases, in connexion with certain apertures and ducts which were mentioned in the former article. It has occurred to many persons, that, in the case of Baker-street and Gower-street stations, nothing would be easier than to remove the glass which covers the gratings over the areas at the sides of the street-footways; and some may ask why any glass was placed there. It appears that the agents of Lords Portman and Southampton urged that shops might at some day be built on their ground, and that communication from footway to shop-window would be desirable. Although such erection of shops is forbidden by an Act of Parliament, the owners of the ground succeeded in getting their view of the case admitted; and the railway was injured to a corresponding extent. At present, however, some of the glass, in the case of the Gower-street station, is removed; and there, where the chief inconvenience was felt, now scarcely any effluvium is perceptible. At Portland-road, all the means of ventilation that were provided are in use. Others might be added.

We have no doubt that in a very short space of time, the engineers will be able to have perfected every feature of the railway and its mechanical appliances for working; but it is necessary to say that we have yet to be satisfied that the Great Western Company will thoroughly acquit themselves of their portion of the work, and that all our recommendations (of which the necessity has been shown) will be considered by the Metropolitan Company. The traffic on Sundays shows no

* See p. 21, *ante.*

sign of decrease, and when the summer comes, there will be great pressure on the company's staff. We must also insist that, so long as trains are run not earlier than six in the morning, and not at a cheap rate, this railway will fail to serve the working classes to the extent it should. When the line is finished to Finsbury (which it is expected to be in August 1864) the company will, in accordance with the stipulations of their Act, run at least two trains each way morning and evening, at a fare of one penny for the whole length of the line or intermediate distances. The Finsbury extension, being for four lines and in open cutting, will make a great clearance of houses. We fear that for many of those who are to be ejected from the class of habitations concerned, the Legislature did not go quite far enough. Cheap trains in the middle of the day, to allow the working-man to dine with his family, would be essential to such influence upon the comforts of the industrious classes, as is no doubt within the sphere of improved means of metropolitan communication.

NEW MATERIALS FOR THE LIFE OF SIR FRANCIS CHANTREY.*

FROM stable-lofts and outsheds, in and about Mayfair and Vine-street, Chantrey carried his clay and his bride into a house in Eccleston-street, Pimlico. Here he commenced sculptor in earnest, and here within a ring-fence of still increasing buildings, he remained from 1810 to his death in 1841. No sculptor in England has covered so much ground with his works as Chantrey covered. Clay and plaster requirements led to room for marble, for sawyers, and for masons, and these in their turn for bankers, for sculptors, and a house for his friend and assistant. Men of mark sat for their busts, and his prices rose with every fresh demand of moment on his time. His highest price for a bust was two hundred guineas, the highest sum ever asked, and the highest that has been obtained by an English sculptor since his death.

He made money with ease, and yet he was careful in keeping it. His account-books were kept by a system worthy of the Barings or Sir Richard Madox Bromley. He knew to a sixpence what each work cost him, minus his own labour. Take a bust for illustration. There was so much for the marble, so much to Cunningham for rough hewing and pointing, so much to Heffernan for carving, and bringing the marble into the state that a day's work or even less from his own chisel would suffice to enable him to send it home with a letter which required, what it soon obtained, approval and a cheque. His balance at Coutts's looking too large to lie idle, he bought into Government and more largely into East-India stock. The latter investment was peculiarly judicious, John Company, of Leadenhall-street, always favouring the claims of any sculptor for monuments in the East who held shares in East-India stock. Chantrey saw this, and experienced the truth of it in many commissions, from the statues of Anderson to those of Heber and Munro.

Chantrey had three first-rate assistants (among many assistants), better men than whom in their way and for a master's purpose never worked in clay, in plaster, or in marble. All three are dead; I will, therefore, say something about them, truly and tenderly as I remember them. Fine, frank-hearted Frederick Smith (son of Anker Smith, the engraver) was his right-hand modeller. Fred's soul was in his art, — unhappily his ambition was limited by the necessities of the week, or, had life been lengthened to him, he had risen to a high rank among English sculptors. Two of his busts—both in marble and from his own hand—will preserve his memory: his busts of Francis Chantrey and Allan Cunningham. Fred Smith knew by heart the features of the men he modelled; he saw them in all moods—in sunshine and in shade,—and has caught the two men, living as they thought and spoke, and sat and moved. When at the Academy, Flaxman's fine lustrous eye fell on Fred's bust of Allan Cunningham, this great sculptor of Michael and the Micheldever monuments, expressed higher approbation of it than was common with his Yorkshire nature, large and generous as it was. Fred's bust of Chantrey was one degree less excellent than that of Cunningham, and that is saying much. My mother has still her husband's bust; Lady Chantrey retains, I believe, the bust of Sir Francis.

James Heffernan, of Cork, comes next before me. I see him in the flesh, as it were, working at his banker by the side of the never-paid-for Hafod monument. He was a consummate master in transferring a look from dull, dead clay to semi-transparent Carrara marble. He saw, and caught, and translated Chantrey into another material. Strange to say, he was only good at a bust. Very marvellous it was to see James Heffernan at work. So sure was he by long servitude and natural confidence and skill in the certainty of his touch, that he would laugh a good Cove of Cork laugh, throw his Irish soul into any little merriment that might be passing, and then resume the chisel and hammer on features where a touch too heavy could never be recalled, and the labour of weeks (to say nothing of the price of the marble) be made entirely valueless. Dear old James's wife wrought me when a boy a sculptor's apron, and I was to have been a sculptor.

"How many an Ovid was in Pulteney lost."

If Mrs. Heffernan could have had her will, I might by this time have been either a full-blown "esquire" in Trafalgar-square, or only a discontented "Mister" and expectant "A.R.A."

Joseph Theakstone, a fine, venerable, kind-hearted man, ever prompt with a kind word and a kind smile: he too is no more—though seemingly in the flesh before me. Theakstone lies in the general cemetery at Kensal Green, not far from my father. He came to Chantrey a thorough master in his art, for he had wrought, and with high wages, in the studio of the elder Bacon. He was a consummate master in making marble convey the qualities and surfaces of silks and satins, velvets and ermines. He played no Phidias or Gibson-tinted Venus tricks—had no secret in his art (what great master ever had?), for he allowed all who cared to see him at his work. Heffernan could not do this—nor, I have heard my father say, could Chantrey, great master as Chantrey was in working marble. What will our Ruskins and others call this excellence in Theakstone—not a fine eye for colour, rather, may I be allowed to suggest, a fine sense for the qualities of texture; but I am wandering, and must fall once more into what the elder D'Israeli called (happily enough), his *anecdotage*.

In the summer of 1831, whilst my father was busy with the sixth and last volume of his "Lives," died John Jackson, R.A., one of Chantrey's very few friends in the Royal Academy, a man always welcome in Belgrave-place. Of one so eminent and so newly dead, my father thought, and very wisely, that the world would like to know something; and Lord Dover, Jackson's great friend, offering his assistance, the Life was undertaken. Chantrey, then in Yorkshire, was written to for help, and a few extracts from his memoranda, half ink, half pencil, will be found interesting and instructive:—

"Jackson was easy and accommodating to a fault. During our journey to Rome, I never saw his temper ruffled for a moment; whatever we did he approved of it; and whether we went to the right or to the left, it was all the same to Jackson."

"I consider Jackson's portrait of Canova* as one of the finest specimens of true character and true colour in modern portraiture."

"In Venice, Jackson spent most of his time in contemplating the works of Titian and Tintoretto, in whose works the finest colour is combined with the finest composition; the latter painter rose much in our esteem. In England we know but little of his merits; he is high in all things where he ought to be high. Jackson, though a silent man, was eloquent here; indeed on all subjects of a professional kind, he showed good judgment, and often surprised by his remarks on works beyond the ordinary line of his studies."

"The late Lord Carlisle bought Jackson's portrait of Northcote, and placed it in the next room to that which contains the head of Snyders by Vandyck; and our countryman's reputation for fine colouring loses nothing by the comparison."

We will now hear Chantrey on his own art,—bust-making:—

"The busts at Cambridge by Roubiliac impressed me at once with a veneration for the genius of the artist. I know of no works of that kind which may be safely compared to them. They have a manly air and vigorous freedom of manner, which proves to me that he treated them rather in the manner of the heads of statues than as domestic portraits, where fidelity of resemblance is more aimed at. Those who have not seen the Cambridge busts, and, above all, the statue of Newton, are strangers to the best works of Roubiliac."

To this I must add what Chantrey thought was the best of Nollekens's many busts, the bust of Dr. Johnson: and he illustrated his opinion by purchasing the original cast of the bust at Nollekens's sale; the loose bold treatment of the hair (copied from a beggar) he thought amazingly fine.

Nor, when accompanied by an anecdote, will the reader dislike to hear what Allan Cunningham looked upon as the best work of his old master. When Lady Chantrey was distributing among Sir Francis's friends little memorials of her husband, Lady C. selected for my father the small clay model of "The Sleeping Children," a very valuable memorial of Chantrey, still in my mother's keeping. When my father showed it to me, I asked him if he had made his own selection? "No," he replied; "if I had made my own selection I should have taken the model for the small-sized James Watt—*not* the model for the large one."

It was Chantrey's custom before commencing a bust to invite his sitter to breakfast. He liked to see his sitter with his morning looks on, and in conversation, and without the remotest idea that he was sitting for his portrait. He thus caught the every-day look of the man. After breakfast the company adjourned to the studio; the sitter's face was caught mathematically in the camera, and then the clay (already shaped into something like a human head) was commenced. The sitter so called was not put into a throne or vice, but allowed to wander within easy shot. Clay was then manipulated into life, and the bust, as far as the so-called sitter was concerned, unconsciously completed. Southey has told this well in his noble "Epistle," in verse addressed to my father.

Horses and women troubled Chantrey in his art. He has left us three horses concocted from "all the king's horses" in the mews at Pimlico. First, there is the Trafalgar George IV. horse, the sire of all; then the Madras Munro horse, very like his father; and then the Wellington Mansion horse, very like his grandpapa. His female busts, only two in number, raise a regret that we have not more of them. His Mrs. Somerville is very fine, while his bust of our beloved Queen, executed in illness and old age, is still, to my thinking, the best bust of her Majesty Queen Victoria. What does Mrs. Thorneycroft say?

A love of money in old age may be excused in a man who was eager to obtain money to leave it as Chantrey left his money. That this love of Mammon grew on Chantrey in his latter years and at a rapid pace there cannot be a doubt. Losses in Pennsylvanian bonds and half-successful intrigues for Government gun-metal for his Wellington statue (free, gratis, for nothing), embittered his latter days. Strange, that three great contemporary English sculptors should live married and die childless—Nollekens, Flaxman, and Chantrey, men of name—surviving only in their marble progeny.

Chantrey died so suddenly that an inquest was held upon his body. I was present. It was a solemn sight not to be effaced whilst unimpaired remembrance reigns. In an exquisite little gallery built for him by Sir John Soane, lay (seen by many lighted tapers) the breathless body and torpid hand that had given life to helpless clay and shapeless stone. Around the body in its winding-sheet were ranged some of the finest casts from the antique that money and taste could procure. Calm and solemn was the scene. My father kissed the cold forehead of his friend with these words—"My dear master." I looked into his eyes as we left together—they were full of tears.

PETER CUNNINGHAM.

* See p. 91, *ante*.

* Where is this portrait?

"THE LONDON ARCHITECTURAL SOCIETY." 1806.

MR. JOSEPH WOODS.

THE paragraph which appeared in our pages recently concerning the earliest architectural Society in London (p. 86, *ante*) having come to the notice of Mr. Joseph Woods, author of the third volume of Stuart's "Athens," and "Letters of an Architect from Greece and Italy;" the architect, too, of the Commercial Sale-rooms in Mincing-lane, and now living at Lewes, he thus writes to an esteemed member of the profession who had commented on it to him:—"You are quite right. I was certainly the J. Woods, jun., mentioned in the *Builder*. I had at one time two copies of our essays, but they have disappeared, I do not know when or how, but certainly at least thirty years ago; and, therefore, I can only speak from memory, which does not quite agree with the list of members given. James Savage was certainly one, and Edmund Aikin, also Samuel Beazley. I saw a good deal of him about that time. Billing and

Birkhead, no; Bubb, a sculptor. Charles Augustine Busby had been my fellow pupil at Alexander's. Cood, maker of artificial stone. Lowry, the engraver, we used sometimes to see, but I doubt if he was a member. Perry, no. Schroder, a sugar-baker. I think neither of the Smiths. Josiah Taylor, the bookseller, was one. J. Wallen was also at Alexander's, but whether he was a member or not I do not know. I think there were one or two more whose names I cannot recall; but Joseph Parkinson was certainly one of us. We published separately a book on the Doric order, written by Edmund Aikin, which brought us into trouble, for Wilkins got an injunction against it. The statements did not profess to be original, and Wilkins was largely quoted; but there happened to be one place where he was not cited, which induced the Court to grant the injunction. Afterwards Wilkins consented to withdraw his opposition on condition that his crotchet about the Temple of Solomon as a Doric building should be omitted in Aikin's book. N.B. This was not the passage on which the injunction was granted."

In the "Essays" of the Society, now before us, dated 1808, the list of members given agrees exactly with that in the paragraph already printed; so it may be either that Mr. Woods's memory of things fifty-seven years ago fails a little (who will wonder if it should?), or that he speaks of those who actually founded the society in 1806.

The volume of Essays comprises a preface, the rules of the Society, and four memoirs, in the whole 151 pages.* The preface gives as a reason for the establishment of the Society that in England, architecture has been considered rather as a trade than as a science; that among the institutions established there is not one which has appeared calculated for the encouragement of architecture:—"The feeble protection afforded by the Royal Academy can hardly be deemed an exception," it continues. "The lectures have long ceased, and medals privately distributed, and the use of a library for a few hours one day in the week, at a time when it is hardly possible for the student in architecture to attend, and that interrupted by long vacations, cannot be deemed of much value;" while the "few clubs which have been formed by persons in the profession, are rather to enjoy the pleasures of good fellowship among men engaged in the same pursuit, than for the advancement of the art."

The subscription was two guineas annually; the meetings were held fortnightly, from the last Friday in October to the first Friday of meeting in May. An ordinary member absent two nights incurred a fine of five shillings. Every ordinary member had to produce, annually, an architectural design never before made public, with critical and explanatory observations, under forfeiture of two guineas; and an Essay on some subject connected with civil architecture, or forfeit half a guinea. The Essays in their published volume are these,—On Modern Architecture, by Edmund Aikin (read October 3rd, 1806); On the Rise and Progress of Gothic Architecture, by Samuel Beazley, jun., 76 pages (December 12, 1806); On the Situations and Accompaniments of Villas (February 20, 1807); and On Dilapidations (January 9, 1807, a foundation for after works on the subject), both by Mr. Joseph Woods, jun.,—the estimable and accomplished gentleman whose letter dated a week ago, firmly and beautifully written, we have just now quoted. "It is charming to see my old friend Joseph Woods," writes Professor Donaldson (surely both of them will forgive us for a friendly breach of confidence) "seated in his study finishing up some of his Grecian studies made above forty years ago, and discoursing of arts and artists with grace and vivacity, and of reminiscences, when we were together at Rome, and were meeting Canova, Camuccini, Thorwaldsen, and like men of mark there; with John Soane, jun., Basevi, Bond, Saunders, Geo. Rennie, the sculptor, and other such now passed away. Hardwick and myself used to go to his rooms, and we read Goldoni and Alfieri together, and battled it out on many questions of taste regarding Greek and Roman architecture."

Such peeps backwards and notes of old friendships do us all good. The day after he penned this memorandum the Professor was busy in Oxford, valuing the property of Christchurch, for assessment to the town rates, having been appointed the valuer by the Poor-law Board; as he was, two years ago, the referee to decide the assessments of the Colleges and University of Cambridge. And so he unites the artistic, the genial, and the practical. We have fallen into a gossip somewhat personal, and perhaps need an excuse, but we could not resist the oportunity to acknowledge the value of the early labours of "Joseph Woods, jun.," now eighty-four.

* "Essays of the London Architectural Society. With four plates. Published by order. London: sold by J. Taylor, at the Architectural Library, No. 59, High Holborn. 1808."

SOME PARTICULARS OF CURRENT COMPETITIONS.

Westminster Chapel.—Twenty-one or twenty-two sets of designs were submitted in competition to the committee entrusted with the rebuilding of Westminster (Congregational) Chapel, James-street, Buckingham-gate. The shape of the ground, existing schools, the required accommodation of 3,000 persons (2,000 in pews, and the remainder in free sittings and standing room), and the limit of expenditure, to 10,000*l.*, including architect's commission, and salary of clerk of works, interposed considerable difficulties. No premiums were offered, but the committee undertook to enter into an engagement with the successful competitor to carry out the work, "if executed, at the usual commission." The plans were to include, with other accommodation, a lecture-room, capable of seating about 600 persons. The greater number of the designs are of the poorest character. Not more than half a dozen have any claims to consideration. The set of drawings selected, marked Y. Z., are by Messrs. Poulton & Woodman, of Reading; but which of them are to be carried out seems not decided; and inasmuch as they include a geometrical Gothic elevation with spire, a design with a portico of six composite columns, and a sketch of a building of Wren-ish character, with steeple, it is difficult to say what the design really is. If the Gothic elevation be adopted, as is said to be likely, a fresh design will be required for the interior. The interior view exhibited includes two tiers of galleries, and a panelled ceiling more than sufficiently ugly. The plan, a parallelogram, with rounded ends, appears to have weighed with the committee.

The design marked "P. Q. 27," is a more artist-like production externally, with a detached tower, and in other respects showing a resemblance to the church in Garden-street, hard by. The plan may be roughly described as ⊔ shaped, and may have induced fears as to acoustical results. "*Au bon droit*, 1 and 2," one of the sets marked "Westminster," and the set "Ahithophel," have merits.

Cork Cathedral.—We are invited to take part in bringing to the decision of a court of law the legality or otherwise of the conduct of the committee in this competition. It seems to us, however, on careful consideration of the circumstances, that such a step would be futile, even if it be called for; and this some of the English competitors have already stated. We gather from the letters addressed to us containing objections to the selected design (Mr. Burges's), such as the smallness of the piers supporting the central tower, and the absence of a chapter-house,* that the ground taken for legal action is the fact that architects were "invited to furnish designs for the erection of a new cathedral, *at a cost not exceeding* 15,000*l.*," and that the first premium has been awarded to a design the cost of which would be double that amount. This, even without qualification, would be insufficient to maintain an action.

In the printed particulars accompanying the selected design, we find the following paragraph:—

"From the position of the proposed building, on the top of a hill, whence it will be seen from the whole town, it becomes a matter of necessity to have three spires, as well as to carry off the height and shortness of the building itself. Of course, it would be impossible to execute these and the church for the 15,000*l.*, and they must, therefore, necessarily be left to the piety of future generations: at the same time, two or more low towers would only impoverish the building, without any corresponding effect." †

And we understand it has been shown to the committee that the edifice, properly roofed in, and ready to receive the completion of the spires when money is forthcoming, may be erected in accordance with the design selected for the suggested 15,000*l.*

New Iron Bridge at Stamford.—It is proposed to erect an iron bridge over the river Welland, at Stamford. Plans were advertised for, and seventeen were sent. From these four were selected, including one by Mr. Wright, of Sheffield, and one by Mr. Page, jun. They were submitted to the Marquis of Exeter, and Mr. Wright's design has been adopted.

Limerick County Gaol.—On the 31st ult. the premium of 50*l.* was awarded to a design, by Mr. Atkins, architect, Cork, for altering the Limerick County Gaol so as to provide separate cells for 100 prisoners, and a new house for governor.

Kenilworth Church.—Designs for the restoration have been submitted to the committee from Mr. Beasley, Mr. Edgar Brooks, Mr. Dolby, Messrs. Wilson & Walker, Messrs. Nevill & Son, Mr. T. Pratt, Mr. Murray, and Mr. Smith, Adelphi Chambers, London. The committee, after examining the respective plans, determined upon accepting that of Mr. Smith.

Broughty Ferry Free Church.—We hear that the Building Committee, after having offered a premium of 10*l.* for the best plan for their church, and received competition designs from Mr. Heiton, Perth; and Messrs. Edward & Robertson and Mr. A. Kidd, Dundee; have selected the design of Mr. Heiton. The cost is supposed to be about 3,000*l.*, exclusive of the ground, and the accommodation about 600 sittings.

Swansea Public Hall.—Designs have been submitted by Mr. Jowett, Mr. Richards, Mr. S. Edwards, and a few others. The design of the last-named gentleman is thought to be put out of court by its costliness. The sum of 3,000*l.* is named by the directors.

Albert Middle Class College.—Mr. Peck's design was chosen, and he has been directed to take out the quantities with a view to obtain tenders.

* The particulars say Chapter-*room*; and this is provided.

† As a note to this paragraph, in MS., are the words:—"In actual construction the piers of the towers should be slightly increased."

BRITISH INSTITUTION.

VERY little can be said in praise of the present collection of modern pictures, at the British Institution. Taken *en masse*, its pretensions to consideration as an exhibition of the average capabilities of those members of the profession whose interests it ought or might most immediately subserve,—namely, young painters, and others belonging to none of the societies that ensure opportunities of exhibition and sale elsewhere,—are, this year, even more limited than usual.

If anything like a fair inference could be drawn from the inspection of such a heap of "nothingness," such an aggregate of unprofitable labour as this, wherein mediocrity is distinction, and promise or progress even as rare as pearls amongst oysters, there would be little to encourage a hope that the few pictures of the few of its contributors entitled to honourable exception may really illustrate a more general though latent ability amongst the many; and that others in whom that ability most unquestionably exists, may not be represented at all adequately. Another cause for its shortcoming lies in the poor measure of assistance afforded it by artists of mark and established position. Some just barely present are less conspicuous than others are by their absence altogether. Mr. E. W. Cooke, A.R.A., for instance, aggravates whilst he delights, in his exquisite little production (119), "Trabacolo waiting for Tide off the Armenian Convent, Lagune of Venice, Sunset," so perfect, though so small; and Mr. R. Ansdall, A.R.A., sends but one composition (20), "Crossing the Moor," which, though remarkable enough in itself for some beautifully drawn sheep, is poor compensation for his customary two or three of much greater importance and dimension. Mr. T. Sidney Cooper, A.R.A., on the contrary, has adopted a larger scale than usual with him; and in 60, "Catching Wild Goats on Moel Seabod, North Wales," cleverly enunciates his thorough comprehension of the distinctive characteristics of this variety of the species. Mr. G. Lance, too, has increased the size of his canvass; and, ever faithful to the occasion, is as unapproachable in the arrangement of fruit and golden goblets as he is unrivalled in the depiction of them when so arranged. No. 239 may be ranked amongst his most signal successes.

Amongst the known men who continue their support, Mr. T. F. Dicksee must be mentioned for three or four of his agreeable idealities. Of these (427) "Lady-bird" is incomparably the best, and charmingly pretty it is: (27) "Rose-buds and Roses," too, is an excellent portrait of a child. Mr. Gale, not so regular a contributor, provides one of the gems in his perfectly finished (429) "Greek Pilgrim." Mr. J. Hayllar would doubtless have been more successful with any episode more capable of pictorial elucidation than (283) "A Practical Joke," which is nothing more nor less than the time-honoured romance telling how

Cromwell's chaplain saved himself from the consequences of making love to the Lord Protector's beautiful daughter, by declaring that his affections were concentrated upon Abigail, her maid; to the end, that he was precipitately obliged to marry the same Abigail. There is so much of promise in this picture, that such an error of judgment is to be deplored. (305) "The young Raffaelle showing one of his works to the Duchess of Urbino and Sora," by Mr. D. Wilkie Wynfield, if the production of a young man, may reasonably encourage expectations of something better to follow, and shortly. It shows independence of manner, and is therefore in striking contrast with another exceptionally excellent work (366) by Mr. E. C. Barnes,—

> "Oh! we'll not joy, but strive in vain,
> To light up those glaz'd eyes again."

This might have been cited as the most powerfully conceived and painted composition in the gallery, were it not so closely imitative of the style of a better-known artist; and would have placed its author high in that class of delineators in which his prototype takes the lead.

Again, Mr. J. Holland's (98) "Venezia," and (115) "The Lion of St. Mark," are valuable items; and the admirable English landscape (164), "Milking Time in the Evening," by Mr. T. Danby, and a brilliant sunset entitled (345) "Cornish Wreckers," by his brother, Mr. J. Danby, are amongst the redeeming features.

Mr. Frank Wyburd's (182) "Xarifa," scarcely sustains the promise of former works: he appears to obtain results too easily, and sacrifices substantiality to littleness and pretty manipulation. (197) "Mira," by Mr. A. Ludovici, graceful and, to some extent, delicate; and (218) "Edgar," by Mr. H. Weigall, very firmly painted, and, if a portrait, considerably removed from commonplace, form attractions amidst much barrenness; and the small contributions—(232) "Little Red Riding Hood," of Mr. H. Le Jeune, and (247) "The Name on the Tree," of Mr. G. D. Leslie—are welcome on the same account. The latter shows more of his inherent taste and ability in (288) "The Lost Carkanet," which, for its originality in educing a story, merits closer attention.

(252) "Passing into the Shade," by Mr. G. H. Boughton, is invested with extra interest by its associative narrative, and is a singular instance—the only one present, indeed,—of the value of exalted sentiment.

Mr. H. Dawson is as easily identified in (47) "Chepstow," as much perhaps from repetition of favourite clever atmospheric effects, as Mr. Frank Dillon in (136) "An Egyptian Well," for his peculiar graphic adaptation of Eastern scenery; and Mr. Harry Johnson equally consistent with local truth, claims recognition in (151) "The Olympæum and Acropolis of Athens, from the Banks of the Ilissus;" and still more forcibly in (360) "Ruins of the Temple of Minerva Sunias, Cape Colonna," the better performance of the two. (8) "The Cathedral and old Castle of Limburg," by Mr. G. C. Stanfield, and (245) "The Minne Water, Bruges," are both noteworthy examples.

(335) "Castle Garth, Newcastle," has afforded Mr. E. J. Niemann an opportunity for dexterity and broad execution,; and his large panoramic view of (571) "Newcastle: Autumn Morning," is a wonderful proof of the facility with which he executes.

In the treatment of such a subject as Mr. R. Collinson has selected (41), "Ordered on Foreign Service," refinement, as well as a due observance of probability, is indispensably requisite; and any amount of elaboration bestowed upon its production can never atone for the want of such. He is far happier in (276) "A Summer Ramble," and leaves nothing to be desired. Mr. W. F. Yeames deserves high praise for his (81) "Bravo." Echo answers everywhere, "Bravo!" (118) "Children Playing," E. Davis, has a natural freshness about it which calls for remark; and (134) "Past and Present—The Prior's Room at Bradenstoke," is one of the cleverest of Mr. A. Provis's clever interiors. (140) "Auld Lang Syne," could hardly be ascribed to its author, so insipid is it, and unlike anything Mr. J. Clark had hitherto done; whilst (143) "Brimstone and Treacle" evokes a wish that it may never be succeeded by any such mistake again; especially as Mr. J. Morgan shows aptitude for much nobler themes. (152) "Jeanie Deans," as portrayed here by Mr. J. Craig, is winsome enough to be mistaken for her sister, "The Lily of St. Leonard's."

Further on in the catalogue (316) "The Dismissal," by Mr. C. Rossiter, is evidence of the effect produced by acquaintance with the French school, and which (383) "The Gamblers," by Mr. J. Payton, will corroborate; while by antagonism perhaps, Mr. W. Hemsley, in (479) "The Path across the Common," makes it more evident, his picture being thoroughly English, and a very admirable and sufficient basis to argue upon.

LECTURES ON SCULPTURE AT THE ROYAL ACADEMY.

ON Monday, the 9th inst., Professor Westmacott, giving his first lecture, made some preliminary remarks upon his renewing, at the request of the Academy, his duties as lecturer. He then addressed the younger students upon the responsibilities they had incurred by devoting themselves to the pursuit of art; and pointed out to them the varied qualifications that were necessary; first, for their attaining excellence in the technical requirements of sculpture especially, and next for their exercising their art in a noble and elevating way, by which its effect on the feelings and sympathies of the public may be secured.

The younger students had then explained to them the principles of the system of instruction followed in the Royal Academy, comprehending efficient teaching in drawing and modelling, under able masters, in the schools of the antique and living model; and the theory of art of the respective branches of practice which the lectures of the Professors were intended to supply. The *rationale* of such division was shown in the distinction that was to be recognized between the merely mechanical workman and the student who aspires to be a real artist; who desires to exercise his intelligence as well as his hand. It was explained how the teacher in the schools might be a thorough master of all that relates to the technical, but might not be competent or qualified to lead the student to a knowledge of the principles which are indispensable in his especial branch of art, and which should guide him in his future practice; precisely as it is quite possible that the most accomplished inventive artist might not always have the peculiar qualities, the tact, the facility, in giving advice and instruction to young students, that go to constitute a good teacher.

The importance and value of true principles in the practice of sculpture, in the works of some of the most celebrated masters in execution, was illustrated by a reference to the works of Bernini, Corradini, Giov. di Bologna, Roubiliac, and others, in whose productions are found the most egregious faults of principle, as regards their art; in confused compositions, flying draperies, exaggerated action, curiosities of mere execution, in veils, nets, and lace; perspectives, and all the picturesqueness attempted but not achieved of landscape, storms, sunrises and sunsets—subjects that the painter's art may represent with some degree of success, but which are utterly beyond the reach of true and pure sculpture. So, while the teacher or master is qualifying the student in the schools, in anatomy, in the knowledge of form, in drawing and modelling, it is for the lecturer to explain to him the principles applicable to each branch of art, and the right way to apply the technical power he has gained. His duty is to prove and illustrate his doctrine by a reference to the productions of celebrated artists and schools.

Executive power in drawing, modelling, and carving, though of the highest importance, should be considered only as a means to an end. Some, unwisely, and fatally to the progress of high art, fancy that when great skill is attained in this all is done. But many a perfectly executed production, most admirable in handiwork, may be utterly worthless as regards the higher object which every work of art should have in view, namely, to address the feelings, and to incite refined emotions in the spectator. A work may possess every academical quality, and yet be deficient in invention, expression, taste, refinement—in all, in fact, that constitutes the real æsthetic element in art. The creative power cannot be taught in schools or elsewhere. Its possession constitutes genius. This is not, however, of every-day occurrence; and even this may be excited by careful training.

Sculpture especially requires to be practised on the principles proper to it. The very simplicity of its means of addressing the sense — Form only,—necessitates the greater care and caution in this respect. The consequence of neglecting these is evident, as has been referred to, in the works of some of the most eminent modern sculptors after the sixteenth century. They are only valuable as warnings. No one copies them, no one collects them, no one makes casts of them; no master who understands sculpture would venture to place them as examples before his pupils. While the value of principles is shown by the estimation in which competent judges of all times hold such works as are found to possess certain qualities admitted to be essential to the art and to constitute its excellence. From such productions a Canon or code of laws has been formed for the guidance and direction of artists; and one of the objects of a lecture is to point out to students the causes of the superiority of the most approved monuments of the art that exist. Though this teaching may run parallel with that of the schools, students well know that their attention could scarcely be secured to both at the same time. Hence the division of labour referred to.

Many adverse influences of a technical kind embarrass and impede the success and progress of really high art in sculpture in modern times. The exceptional use of the nude form, arising from our habits and our non-acquaintance with it, is one of these. Also, when drapery is used the modern costume is most unfavourable to sculpture; and, thirdly, the prevalence of portrait, seeking individuality, acts injuriously on the possibility of inculcating a love for the generally Beautiful. The next great drawback is the absence of high moral impulse in sculpture. The great artists of antiquity, as well as those of the Revival, caught this from the people. They but illustrated and met the popular wants. Our artists usually must take their impulse from the public; but it is a public that has no lofty aspirations in this direction, no knowledge of or feeling for a high quality of form; and the consequence is, that the kind of art produced affords little hope that sculpture will meet with the kind of encouragement popularly that will restore it to its true position. It is said sometimes that artists ought to educate public taste; but are artists always and necessarily competent to do this? Must not they be educated? In what do artists, as a rule, show their superiority? Must not the teacher have been taught? This knowledge is not intuitive.

The whole character of sculpture underwent a fatal change in the sixteenth century, when it became *academical*, the causes of which will be more fully explained in a subsequent lecture. It is sufficient here to say the whole object and direction of the art was changed. As a rule it has appealed to the eye, or been produced to please real or pretended connoisseurs, or used for mere architectural decoration,—never, or seldom, addressed to the heart or to the sympathies of the people. Thus it was constantly seeking new modes of presentation. Fancy or fashion influenced its practice; it was constantly changing. From this period sculpture has, in truth, had no settled position. Considerable power has been exhibited in all the mechanical or more artistic requirements of the art, but it has not made its impress as the language of thought or feeling of an original kind. Where it has been used for illustration, subjects have been hunted up from obsolete sources, usually ancient mythology and poetry, in which the artists have not believed, and whose works, therefore, wanting the earnestness of truth, are simply clever and well-executed imitations or repetitions. Or, in place of this conventional art, every means is employed to attract attention, careless of the power of discrimination in a public notoriously ignorant and uneducated in the true principles of sculpture; elaborate workmanship, sensuous subjects, unmeaning figures,—on one side exaggerated, on the other, insipid,—and, worse than all, claptrap tricks are employed, as a means of producing effects, totally apart from and independent of sculpture proper.

The importance of this subject, as respects the future of sculpture, was strongly urged upon the students. The history of the degradation of the art, from the time this false influence first appeared, is sufficient to awaken interest in the subject, in all who desire to see so noble an art restored.

The art still is capable of renewal. But it must be practised upon different principles to those which have influenced its uncertain existence for many years past. We must recur to purer sources of inspiration. Subjects must be found, and felt, by modern sculptors, as they were presented to the great artists of former ages. The Greek employed his art in the honour of his religion and to glorify his gods. The sculptor of the revival used his art in the service of that purer Christian religion which filled his heart and mind; and how exquisitely, in spite of his want of academic or artistic forms, he treated the subjects he illustrated, all must admit who have examined with attention the numerous works of the early Mediæval schools, spread over Italy, England, France, and Germany. Our own sacred volume, the Old and the New Testaments, afford us art inspirations surely quite equal to the Pantheon of a gone-by and false mythology. It has been shown, by some few

sculptors of modern times, that it is possible to effect this change. Productions might be quoted, if necessary, that may safely encourage others to take a higher aim than that of merely reproducing worn-out illustrations. It is for the rising generation of sculptors to redeem the age from the reproach of constantly running in the old worn-out track, and to show that a beautiful art may still be exercised in a way to address the feelings, the sympathies, and the understanding of the people.

FINE ARTS IN ANCIENT IRELAND.*

NONE but those who seem to be of opinion that out of Ireland "cometh no good thing" can doubt that in ancient times a high state of art-cultivation there existed, whatever degree of general civilization may have accompanied it; and that eminence in art could only co-exist with some considerable degree of general civilization one cannot but admit, since the history of the whole world indicates as much; although high art, in ancient times, has certainly also co-existed with much that was savage and otherwise what we would decidedly call uncivilized. But so it is even now, and in England, too: a few hundred years hence, doubtless, it will be a general opinion that, notwithstanding our eminence in the mechanical and other arts, we were a set of semi-savages. As for such art as that displayed in ancient Irish metalwork, of which more especially Mr. O'Neill gives coloured and other illustrations, we are very much inclined to think with him that,—

"If our modern workers in metal could show as much art power, and use it as skilfully, their works, even if based on common bronze, would be of many times more value than so much solid gold; but, now-a-days, the mere intrinsic value of the metal is generally the first consideration: 'Is it solid gold?' is the primary question: the artistic part is not heeded, simply because decorative art is not properly cultivated. Not so the Irish workers in metal: with them the artistic part was everything: the intrinsic value of the materials was not minded by these talented men."

As to how the ancient civilization of Ireland sank into actual semi-barbarism Mr. O'Neill has but too feasible a theory. The conquest of Ireland, he urges, took hundreds of years fully to accomplish: the severities, and the ruthless treatment of the "mere Irish" for so long a period practised by the English conquerors, degraded the people and retrograded their ancient civilization; and it is only of late years that a very different line of policy is making some amends for that long-continued "injustice to Ireland." We fear there is but too much truth in this theory: at all events, that in Ireland, six hundred years ago, and for an indefinite period previously, there existed a peculiar order of civilization which thereafter gradually sank and expired, there appears to be every reason to believe, notwithstanding the exertions of Dr. Petrie and others to disprove the existence of such a state of civilization.

Of the art displayed during this ancient period Mr. O'Neill admits the defects, but upholds the real merits with all the enthusiasm of a true Irishman.

"We find," he says, "that, in figure, the remains of Irish art are defective; but, in ornament, they show that, in a knowledge of the sound principles of art, in breadth of effect, united to richness of detail, in fertility of invention, and delicacy of execution, the Irish artists were consummate masters, and have, perhaps, never been equalled by those of any other nation; that they excelled in colour as well as in design; and that they, probably, coloured their public buildings and monuments."

The total absence of a Christian character in Irish ornament, as he remarks, has an aspect of Paganism. This he accounts for by answering "that the style was established long before Christianity was introduced into Ireland; that on the change in religion being made, the Irish artists employed their style for Christian purposes; that objects, such as the serpents—which originally had a special religious significance among the Pagans—had gradually lost that significance, and become, in the eyes of the multitude, mere objects of decoration; or, even if the converts regarded them in the Pagan religious way, we know that the missionaries of old knew how to wink at some minor matters, in order to effect the great purpose of Christian unity.

That the peculiar form of the Irish cross is heathen, and was a sacred symbol with the Pagans, we have already mentioned: that it has been continued among the Christianised Irish, and used as a sacred emblem we admit; but that does not prove its Christian origin any more than the urn which we see placed on a modern tomb, or marked on the seal of a mourning letter in this Christian age, is, therefore, an emblem of Christian origin: on the contrary, we know that it originated in the Pagan custom of burning the dead, and collecting the ashes into an urn, and hence the urn became an emblem of death; and thus we hold that the character of much of the Irish ornaments, and the particular form of the Irish cross, had their origin among Pagans: this symbol signified Bel, Baal, or Apollo; these being names for the god of the sun, whose annual, or annular course, was indicated by the ring, and the seasons by the crossing lines or quarters. In like manner the serpent was sacred, because that animal sheds its skin annually; and for some other equally superstitious reasons: even the plain cross had a sacred import, as indicating the sun's crossing the equator. Thus it was that, among illiterate nations, symbols were devised to supply the place of words. . . . .

Our conclusion is that Irish art arose some hundreds of years before Christianity was introduced into Ireland."

We do not like Mr. O'Neill's very shallow and Higginsite allusion to the sun "crossing the equator," and all the nonsensical stuff usually associated with such attempts to explain the revered and exceedingly ancient symbol of the cross; although we freely admit that the evidence is irresistible that it was used as a religious symbol for ages previous to the birth of Christ; and hence was "Pagan," if you will, in its origin. Moreover, "Great is truth, and it will prevail;" and we are quite ready even to strengthen Mr. O'Neill's opinion that the Irish wheeled cross is probably Pagan in its origin, by pointing out to him another sort of meaning in it, if he can himself deduce that meaning from the fact that the wheeled cross may be seen on the Assyrian sculptures in the British Museum, where it is essentially associated with the presiding genius or supernatural guardian, or angel, of the king; above whose head, and occasionally simulating whose very attitude, it is sculptured, with a strong resemblance to the Persian ferocher, fairy, or Peri, which Maurice (and he is not very far wrong, except in mere expression) calls "the Image of the Soul." In the Irish wheeled cross, however, what is believed to be the Saviour takes the place of the king's angel in the centre, though not as in crucifixion. On one of the round towers of Ireland, that of Antrim, if we remember rightly, there is over a doorway a wheeled cross; and on another, in a like position, there is a figure not unlike that of an Irishman in a state of saltatory excitement.

This brings us to what Mr. O'Neill says of the round towers. These towers, he is of opinion, are Phallic; but in this he is not very original. This, it may be recollected, was poor O'Brien's theory; and indeed, if we mistake not, this was Higgins's theory also. Mr. O'Neill, however, does not even broach this theory in the present volume, but speaks of another in which he means to do so. The Phallic symbol was doubtless a very widely extended one; but till the true religious meaning of this symbol be expiscated, no very accurate theory can be worked out, we should think, as to its connexion with the round towers of Ireland. That its real and ultimate meaning was something far beyond the grosser and more obvious one which it suggests can, we think, be clearly shown; so that the *phallus* was at best merely the symbol of a symbol; but this we need not here enlarge upon any farther.

Mr. O'Neill says, "We have heard that there are buildings in France which resemble the Irish round towers." Here he indicates that he has just missed by a hair's breadth materials for at least as feasible an idea as the Phallic one; and we would take leave to suggest that he ought to look a little farther into the subject of those buildings in France to which he alludes, before he publishes his volume on the "Phallic mysteries." The buildings to which he refers can be no other than those called by De Caumont, the "lantern of the dead," or the "beacon of a cemetery." That the Irish towers served some such purpose in connexion with those very strange, but still we think traditionally emblematic and explicable observances called "Irish wakes," and "*waking* the dead," we think every one who reads the paper we published recently,* in regard to "The round towers of Ireland," must admit. It is a curious circumstance that in Scotland there are churches which still go by the name of "the Stanes," or "the Stones," a name whereby churchyards were known in Pagan times. The "Stones" were of course allusive to those universal mementoes of the dead, the tombstones, which are by no means of Christian origin, or of mere Christian antiquity. In connexion with this circumstance it is also a significant fact, that the Irish towers are in some districts called "cloctheachs," which, Mr. O'Neill tells us, mean the *stone* houses, or the stone buildings; a name which may have been more especially meant in ancient times to indicate the house or building at "the Stones," as in Scotland,—whose intimate connexion with Ireland,—the actual Scotland of extreme antiquity—is well known; as is the fact that there are round towers of the Irish order in Scotland itself. There are such towers in India, which Lord Valentia was told were of an extreme antiquity, and belonged to a people whose religion was as mysterious as those ancient towers; and if so, doubtless, they, too, were "lanterns of the dead," and connected with the religion of "the terrible Nirritti," the goddess of death and destruction, which the conquering "white-visaged friends of Indra," the Aryan forefathers of the Brahminical race, found already prevalent among the aborigines of India; and which, as we have before suggested in the *Builder*, probably constituted the primitive form of Buddhism itself, afterwards revived by Sakya, the son of a Brahmin, and again suppressed. Lucian, the Pagan writer, also describes such towers as the Irish, as existent in Syria before the temples of his time. In connexion with these allusions to round towers in Syria and India, and the supposed use of the Irish towers as "lanterns of the dead" in Irish "night wakes," we may mention that in the eighteenth volume of the *Asiatic Journal, of Bengal*, we have seen, in an account of the Bodos and the Dhimals, who are sub-Himalayan tribes, that waking the dead, just as the Irish do, with drinking and feasting, is a prevalent practice; and that they also go to the graves of the dead, and there leave food and drink. Other practices of these tribes are curiously suggestive of Scottish and probably also of Irish customs; such as youths, towards the end of the year, going about after nightfall dancing and singing, and asking largesse, dressing themselves as females, &c.; which, in Scotland, is called "guising," or disguising, and partakes much of mummer and carnival customs.

Another small item of contribution towards shedding a little more "lantern" light, or "dead" light, on this mysterious subject, and we have done. At a provincial council of bishops at Eliberis, in Spain, the precise date of which we do not recollect, but which took place some time before the six-hundredth year of the Christian era, this council "forbade tapers to be lighted in cemeteries *in the day-time*, that the spirits of the saints might not be disturbed,"—a fact which, however obscure in its inferential meaning, at least seems to imply that tapers or "lanterns of the dead" *by night*, were in use very early in the Christian era, though this does not carry us quite back to pre-Christian times.

* The Fine Arts and Civilization of Ancient Ireland. Illustrated. By Henry O'Neill. London: Smith, Elder, & Co. Dublin: Herbert. 1863.

* See p. 77, *ante*.

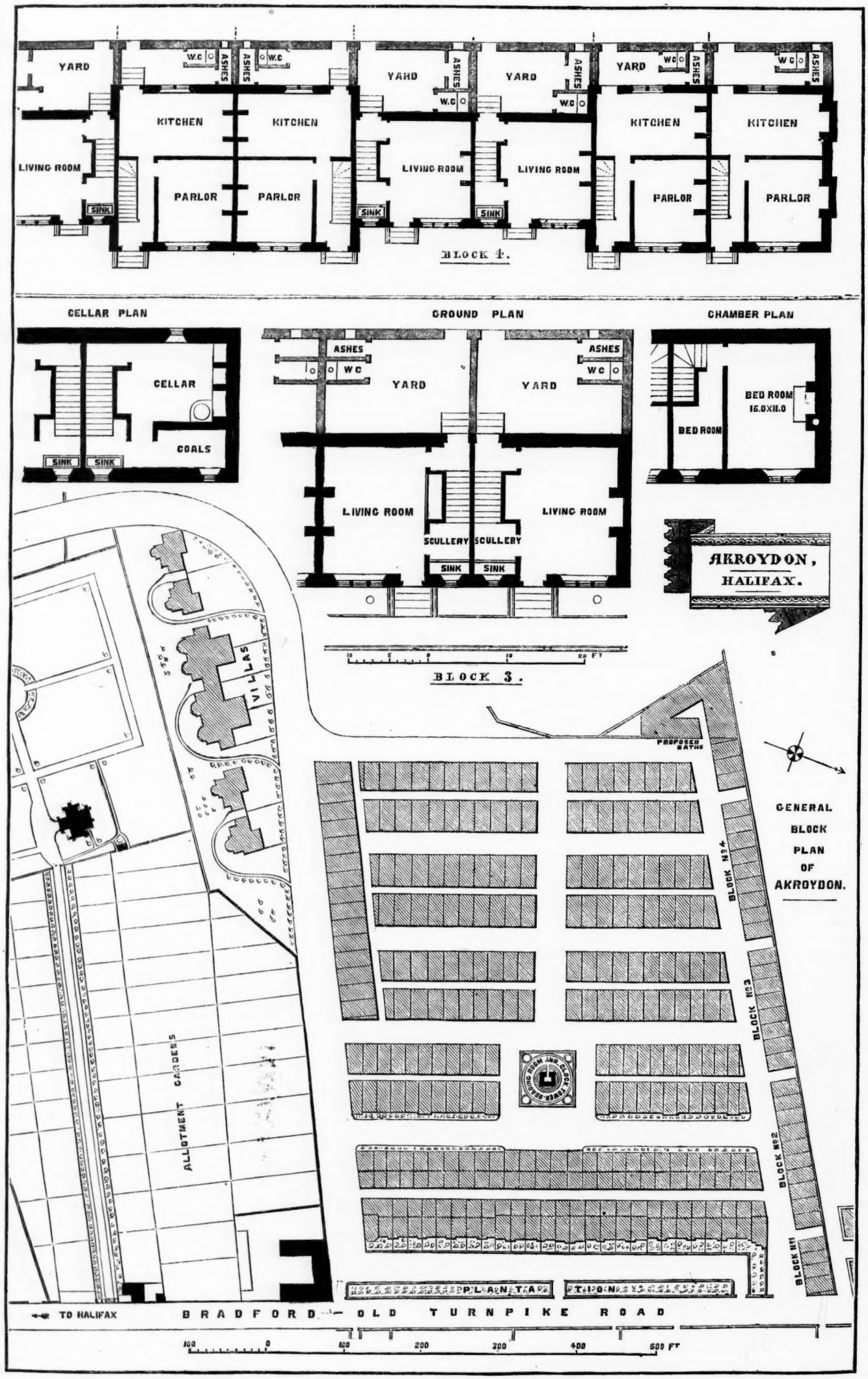
NOTTINGHAM ARCHITECTURAL ASSOCIATION.

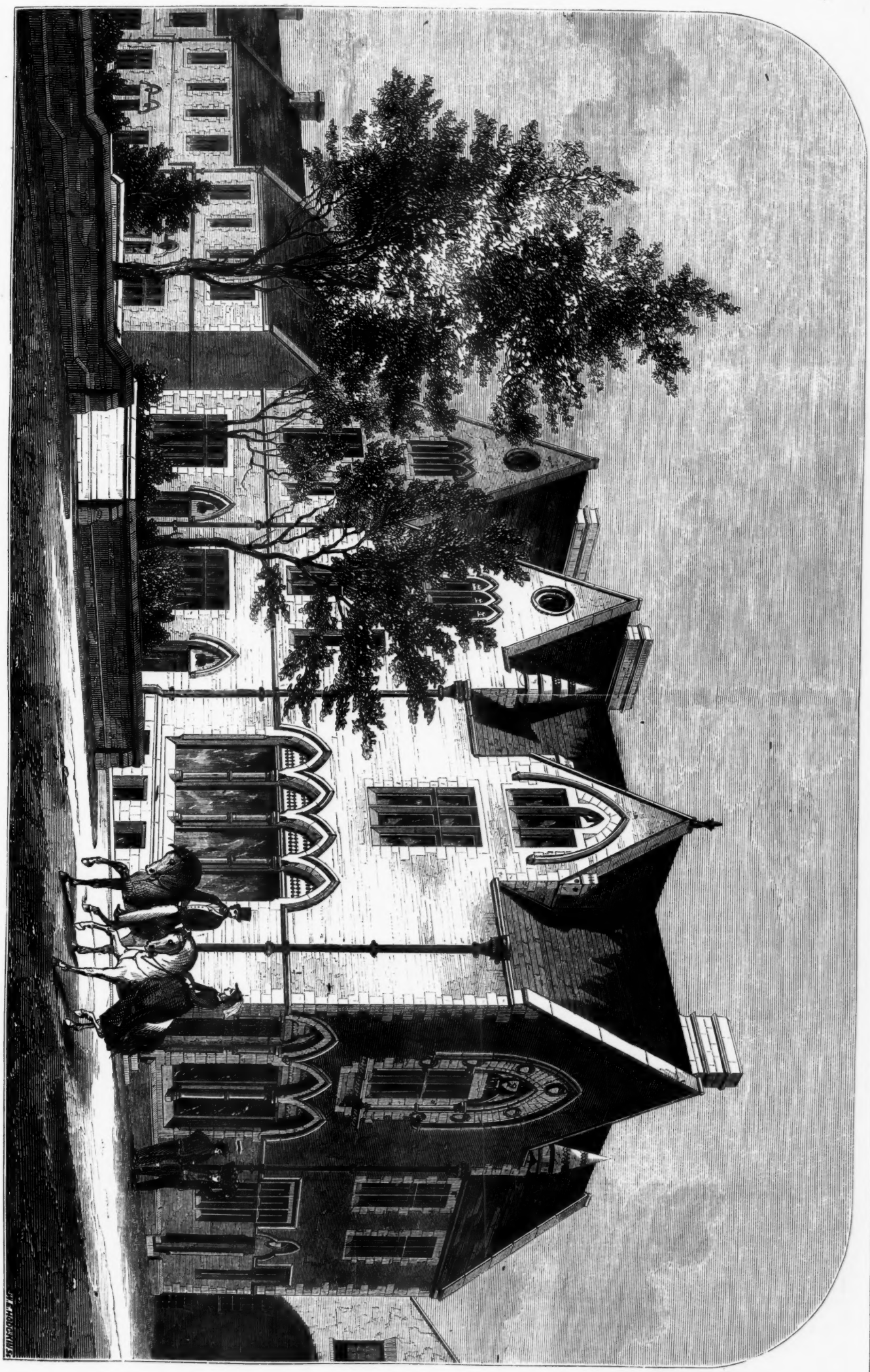
THE ordinary meeting of this Association was held on the evening of Tuesday, February 3rd, 1863, in the committee-room of the Public Offices, St. Peter's Church Side; Mr. Hine in the chair.

The discussion on the question of the voluntary architectural examination, as contained in the paper of regulations and course arranged and prepared by the Royal Institute, was resumed; and after giving so important a subject that full consideration and discussion which it demanded, it was unanimously resolved,—

"That this Association, while fully appreciating the exertions of the Institute in the preparation of the valuable scheme of examination for the architectural profession, now submitted for their consideration, deems it due to the large body of architects of experience already in practice, and who cannot be expected to devote the time necessary to an examination, that they should receive from the Institute such a distinct recognition of proficiency by diploma or otherwise, as will place them in a position not inferior to those younger practitioners who may present themselves for the honours of the Institute."

A communication from Mr. Pritchett, the hon. secretary to the Alliance, respecting the objectionable conditions contained in the Plymouth Wesleyan Chapel competition, was discussed, and the members of this Association recommended that all designs be withheld until the conditions were made more satisfactory to the profession. After the nomination of gentlemen as associates, and the transaction of general business, the meeting adjourned to the 3rd of March.


YARD
W.C
ASHES
KITCHEN
LIVING ROOM
PARLOR
SINK
BLOCK 4.
CELLAR PLAN
CELLAR
COALS
SINK
GROUND PLAN
YARD
SCULLERY
BLOCK 3.
CHAMBER PLAN
BED ROOM
16.0X11.0
AKROYDON,
HALIFAX.
VILLAS
ALLOTMENT GARDENS
PROPOSED BATHS
GENERAL BLOCK PLAN OF AKROYDON.
BLOCK No4
BLOCK No3
BLOCK No2
BLOCK No1
PLANTATION
TO HALIFAX
BRADFORD — OLD TURNPIKE ROAD
100 0 100 200 300 400 500 FT



AKROYDON; HALIFAX.—MR. W. H. CROSSLAND, ARCHITECT.*

[See p. 109, *ante*.

A LECTURE ON ARCHITECTURE TO THE ROYAL ENGINEERS.*

Ornamented Construction.

THE elements of construction in Classic architecture are so simple, that they do not afford striking illustrations of the principles of ornamented construction. The base and capital of a column are of very little constructive value, but the one gives apparent stability to the shaft, the other seems to confer on it a power of supporting an entablature, and both are appropriate for their purposes, as may easily be tested by reversing their positions. In like manner the division of the entablature into three parts—architrave, frieze, and cornice—does not add to their strength, but does to their appearance of stability, and the plain string lines of the architrave help this considerably. The frieze, as the neutral part in the centre, was generally the most ornamented; while the cornice, which was to crown all, and give shadow, was always the most broken,—first, because a plain shadow is always heavy, while a broken shadow is sparkling; and, secondly, because the cornice, having nothing to support, was the part of an order that might be most playfully treated.

In the classical orders every ornament is appropriate to the use of the part to which it is applied, and is elegant in itself; so that all the requisites of good architecture are satisfied, and the result has commanded the approval of all succeeding generations. If you analyze in the same way the ornaments of any Gothic building, you will see their architects followed out precisely the same system. Take, for instance, the vaulting shaft which appears to support the springing of the vault in all the stone-roofed churches: you know that it is of no more use than the torus of a Classic base, or the foliage of a Corinthian capital; but take it away, and it immediately appears as if the vault would slip down the wall. Sometimes it rests on a bold bracket, at others on the capital of the main pillars; and in later times was brought down to the floor; but it was always felt to be so beautiful and so essential an ornament that it very seldom was dispensed with. Originally, the great circular pillars that supported the main walls of the building were ornamented, as in Westminster Abbey, by four such shafts,—one pointing to the main vault of the nave, another to that of the aisles, and two more which appeared to carry the mouldings of the pier arch. These afterwards were multiplied to a very great extent, but never lost their apparent meaning, and thus retained the characteristic of good architectural ornament. In early times they always had capitals, and rightly so; because, in spite of the practice of later architects, the change from a straight line to a curved one ought always to be marked in good architecture, and can seldom be marked too strongly. Instead of doing this by mass, which is the most obvious mode, the Gothic architects accomplished it by sharply-marked and deeply-cut mouldings; and again, frequently made their shadows still more prominent and sparkling by partially filling the cavettos with foliage. If we turn to the vaulting of a Gothic cathedral, we again find it constructed on precisely the same principles. A rib, especially on the angle of an intersecting vault, is a purely mechanical necessity; but it may be built flush with the face of the vault, or may be concealed. The Gothic architects, on the contrary, took care to display it so as to give the appearance as well as the reality of strength. They then accentuated it by deep moulding and sharp angles, to give it an appearance of power far greater than if it had been either simply square or round: afterwards they were so pleased with the effect of these ribs that, in this country especially, they spread them all over the vaults in the most complex and varied patterns: they tied them together at their intersections with bosses, and varied their dimensions with the relative quantity of work they were supposed to be performing. All this was perfectly legitimate; for, though no one supposes that all these ribs are really mechanically essential to construction, the mind never draws the line too closely between use and ornament. It is satisfied when the ornament is based on mechanical principles, and used where it may be or might have been, mechanically correct, or even where it suggests such a purpose. On the other hand we are always pleased with a great display of labour and ingenuity; and when elegance is added to this elaboration, success is certain.

It would be easy, though I fear tedious, to go on analysing all the parts of Gothic ornamentation,—the windows with their mullions, the buttresses with their pinnacles, the towers and steeples all obey the same laws; all are based on mechanical exigencies; but these are made gradually to yield a part at least of their demands to ornamental arrangement; and frequently small details at last merge into mere ornaments; but in good architecture they are never employed, except where their protoplast would have been useful, or where they do not at least suggest that they may originally have done good constructive work. When this is the case, we have no right to inquire too minutely whether this is absolutely true or not. But if one ornament is used where under no circumstance it could have been useful, its employment is wrong; and if executed in any material which could not constructively be employed for that purpose, it is especially offensive. In a few words, the best architectural ornament is that which most clearly expresses the purpose and the construction of the building, or of that part of the building to which it is applied; and it approaches perfection in the ratio in which, besides its power of constructive expression, it is elegant in itself and pleasing to contemplate, irrespective of its architectural position.

The Gothic instances above quoted are, perhaps, the best examples of how little ornament is really required for architectural effect; and in many of the Mediæval buildings, those devoted to domestic uses especially, there is frequently only such an amount of ornament as would not increase the expense 1 or 2 per cent., while the result is most satisfactory.

The circumstances that generally lead modern architects into extravagance is that, instead of truth in construction and beauty of form, they attempt to disguise their buildings in either Classic or Mediæval costume; and the moment they attempt this they plunge into incongruities from which they can only extricate themselves by means of money and by hiding, by means of ornament, their want of thought, and thus hoping to distract attention from the falsehood they are perpetrating. There are so few truthful buildings in modern times, that it is difficult to get examples to illustrate these propositions; but two clubs in Pall-mall—the Reform and the Army and Navy—will suffice for present purposes. The former has no ornament but a cornice (which would have been better if it had been less expensive) slightly ornamented string courses marking the floors, and dressings to the windows: all this is perfectly legitimate and would have been ample had it been accompanied by a more ornamental arrangement of the building; but, unfortunately, its architect—though more free than most of his compeers from the vice of copying—was haunted by the idea of the Farnese Palace at Rome while trying to accommodate the wants of the Reformers in London, and he has, consequently, produced a building too gloomy for the climate, and especially for the northern aspect of its principal façade. Even a slight grouping of the windows would have done a great deal for it, as may be seen by observing how much that has improved the western front towards the Carlton. Or how beautiful the garden front of the Travellers' Club is, simply in consequence of the windows being grouped ornamentally, and this with the smallest amount of ornament has produced one of the most beautiful façades in London. The Army and Navy, on the contrary, is covered with most expensive ornament, a great deal of it good in itself, but utterly inappropriate to the place and the climate, and only tolerated because a palace in this style was erected in Italy in the sixteenth century; but there is no evidence of design in the building, no accentuation of the angles, nothing to tell of the internal arrangements. In fact, a most unsatisfactory result for an enormous outlay. But this is by no means the worst form of the borrowing system. Take, for instance, the London University. Here is a great portico, beautiful in itself, but at the top of a staircase no one goes up, and leading to a door that won't or can't open. But having put the portico there the whole building is sacrificed to it. The wings are plain and quiet enough, but it would have been an immense convenience to have had a third story. It would have given dignity to the building, and have afforded immensely increased accommodation at less expense than by any other means; but because there was a portico this became impossible; so that not only have we the direct expense of building the useless portico, but the indirect result of being debarred from using the most obvious means of obtaining the accommodation we require. In like manner, the portico of the British Museum may not have cost more than 50,000*l.*, but it has caused the waste of half a million; and half the funds of the Fitzwilliam trustees were wasted on a portico, the only use of which was to ruin the building for the purposes for which it was intended. It is this absurd system which has brought discredit on architecture; but if only a very small fraction of the money wasted on these very unsatisfactory buildings had been applied to express the meaning of any carefully thought-out and purpose-like design, to accentuate its construction, to enliven its façade, or to refine its more utilitarian parts, the result would have been widely different. But the melancholy truth is—it is so easy to borrow, it is so troublesome to think. When we have Gothic and Grecian details all ready to our hands, why must we set to work to invent new ones, and to think about every detail? While we have books which enable us to make up a design without thought or risk, why should we be forced to try and invent every detail, and to spend days and weeks in fitting every part to every other, with a painful suspicion that the result may be unsatisfactory after all? So architects have reasoned during the last three centuries, and the result is what we see, failure everywhere, and failure so complete as to prove beyond all power of contradiction that the moment an architect, no matter what his talents may be, once wanders from the path of simply *ornamenting ornamental construction*, and tries to reproduce the architecture of any other age or country,—once he deviates one inch from the path of truth and of common sense, combined with taste—he fails. He always has failed hitherto, and so far as can be seen, he always must fail in future.

Materials.

There is only one other point which I shall have time to dilate on now, and that is the influence which the materials employed ought to have in regulating the design. Taking bricks, stone, and granite, as the three degrees of comparison, it frequently occurs that an architect is, from the nature of the locality, restricted to one or the other; and when this is the case it is a fatal mistake not to accept the condition promptly, and to try to do the best he can with the material at his command. In doing this, however, it must be borne in mind that a design suitable for one class of material is, in fact, unsuitable for any other: with brick, for instance, it is almost impossible to obtain anything like grandeur, at least, if there are openings in it. A great solid bastion or tower of brick may be grand, because we lose the material in the mass; but the moment it is pierced or broken up, we see how small the material is, and that effect is lost. This is, however, no reason against its employment in architecture, it is only a reason for treating it in conformity with its nature; the consequence is, that a brick building can hardly be too much broken into small parts, or too carefully accentuated at the angles, or wherever strength is required, or too much fitted with discharging arches or other expedients to express strength of construction. Coloured bricks may also be used to accentuate arches and to mark string courses, and moulded bricks, or *terra cotta*, to ornament mouldings or cornices.

The first class—or accentuation by construction—was largely employed by the Romans, and the result is that some of their brick buildings look almost as monumental as if of granite. The last—by mouldings and colour—is largely employed in the north of Italy, and the result is the production of buildings as artistically architectural as any in stone, or even of marble, and quite as durable as either; but it must not be concealed that when so used it is very nearly, if not quite, as expensive as stone, and requires an amount of thought and skill on the part of those employing it which there is little hope of finding in the present day. Generally speaking, it may be asserted, that in almost any locality, in Great Britain at least, the moment you pass a very low quality of design, a better architectural effect may be obtained for the same expense by the employment of stone than by the use of brick. The stone itself gives a certain architectural character to the building, and very much less ornament will suffice with that material than with the other.

When brick must be employed, the first aim of the architect ought to be to *strengthen*,—to get rid, in fact, as far as he legitimately can, of the inherent defect of smallness, and consequent apparent weakness in the material he is employing. The employment of tiles in forming arches, as done by the Romans, is one of the most obvious expedients for this purpose, but vertical projections and reveals may also do much. Horizontal projections are not so easy with so small a material, but something may be done by a change in colour; and if moulded or ornamented bricks are not

See p. 101, *ante*.

available, or too expensive, a string course of darker colour will assist; but it must be confessed that a projection, however slight, will do more.

When stone is employed, especially if it is of light colour, all the required relief may be easily obtained by projections, and their consequent shadow and ornament can always be added to the extent to which the money at the disposal of the architect may justify. Granite is seldom used for domestic purposes; when employed in engineering it cannot be left too plain or too solid, its greatest merit is its mass and hardness, and these ought always to be left to tell their own tale; and when employed in smaller structures, still squareness and simplicity ought to characterise the outline of the mass and the design of the mouldings or ornaments; of these last, however, there can hardly be too little.

Of late years it has been the fashjon to cry out against stucco, and to proclaim that it should never be used in external architecture. This, however, is hardly just; a stuccoed Grecian portico of colossal dimensions, or a stuccoed Gothic cathedral, or even parish church, a stuccoed palace, or college quadrangle, are abominations it is true; all these aspire to be monumental, durable buildings, in the erection of which expense is not a primary element, and the use of so perishable a material is a mistake and a sham; but stucco applied to the external walls of brick dwelling-houses is not only a reasonable means of keeping these walls dry, but adds to the lightness and cheerfulness of its aspect, and also allows of an amount of ornament being applied which would be unattainable in consequence of the expense under other circumstances. The only rule to govern its application is that it shall be avowedly stucco, and shall not attempt to look like granite or stone; nor shall pretend to monumental forms, or attempt to look as if designed to last for ever. With these restrictions its use is as legitimate as that of any other material, provided a more durable one cannot be attained, or the means are not otherwise available for obtaining a suitably decorative character.

There is a class of monuments, such as triumphal archways, columns, tombs, &c., to which I have not alluded in the above remarks, partly because they are not such as would interest you especially, and more because it would take long to explain their peculiarities. All of these which we use were invented by the Romans, who were very indifferent architects, though wonderful builders. They took a city gateway, for instance, and by the process described above first arranged its parts ornamentally and then ornamented it till, from an object of engineering, it became a work of architecture. So far they were right; but when they detached it from the wall and stuck it up where no one need, and few did go, through it, then it became an absurdity. So, too, with their columns. What Trajan wanted was a place on which he could engrave a record of his exploits, so he took a column, covered it with bas-reliefs, and placed it in the centre of a small court with galleries all round from which they could be easily seen; all this was tolerably reasonable. The absurdity arises when we attempt to copy without understanding, and stick up plain columns to no purpose except to place a statue where it cannot be seen, or archways which no one may go through. Even the Arc de l'Etoile at Paris, which is, perhaps, the best modern example of its class, would have been a far finer monument if it had contained a Hall of Victory in its centre instead of having an unmeaning arch through it. All this merely brings us back to the point from which we started. If you wish to do what is to be permanently good and satisfactory, first design your building wholly with reference to the purposes for which it is to be erected, or the uses to which it is to be applied; secondly, arrange the parts so obtained as ornamentally and symmetrically as the purposes of the building will admit of; and, thirdly, ornament the parts so arranged to such an extent as the nature of the building requires, or as the means at your disposal will admit of; and, lastly, let the ornaments be appropriate to the building and to the age in which it was erected.

If these rules are attended to, it will not be easy to go wrong, and good architecture may be attained at a very slight cost indeed.

In conclusion, let me try if I can, by repeating in as few words as possible what I have been saying, make myself more clearly understood.

The first thing I ventured to insist upon was, that there were two great classes of human arts—the *Phonetic*, or those concerned with the utterance or recording of speech, which is the exclusive privilege of mankind; and the *Technic*, or useful arts, which are not so exclusively man's property. But without insisting too much on this, the great point which we have to consider now is, that these two families, or groups of arts, are cultivated by totally different processes, and aim at totally different results. Both are capable of an æsthetic development—prose and narrative can be elaborated into eloquence or poetry, and every useful art into a fine art, without our ever being able to draw the line distinctly where the prosaic or useful ends, and the poetic or fine art begins. A still more important point is, that there is no affinity or connexion between these two groups as to their processes or principles; but, it is while thus repudiating her reputed sisters that architecture takes her true position as the queen of the useful arts. If not absolutely the most important of these, she can at least claim to be that one most capable of æsthetic expression, and the only one that has hitherto been refined into forms of permanent beauty, or has aimed at the attainment of grandeur or sublimity.

In all countries of the world, down nearly to the present day, and in Europe down to the sixteenth century, this art continued to be practised, and everywhere with success, on the same principles as in all ages governed, and do still govern, the development of all the sister useful or technic arts. At the Reformation, a new and extraneous principle of imitation was superadded, and for the last three centuries we have been labouring under the delusion that it was neither science that advanced the art, nor truth that rendered its production pleasing, but some strange notion that it would be beautiful if it could only be made to look like something it was not, or had only some very slender connexion with. What is now wanted to restore the art to its prestine pre-eminence is a return to those simple principles which guided the architects of Egypt, India, Greece, Rome, or the Middle Ages, and which are identical with those that now guide our shipbuilders, or machine or engine makers, or the engineers who construct our bridges or our forts. There is absolutely no mystery about it. All that is required is strict and undivided attention, first, to convenience, next to constructive necessaries, then to the ornamental or harmonious arrangement of the parts, and lastly, when it can be done, to their ornamentation.

It may require more thought and self-negation to succeed by this path in the present state of the art than by following the fashion of servile copying; but by the one path certain success may be easily and permanently obtained by even the most moderate abilities, while by the other path no genius will enable any man to erect a building which will be considered successful many years after its completion. This may appear a daring assertion, but it is justified by the experience of 4,000 years, during which the first path was followed by all the nations of the earth with uniform success, and by the experience of the last 400 years, during which the other process has been cultivated; and you yourselves can judge how far during it men have succeeded in attaining what they sought for. Taking into consideration the amount of money spent, the amount of talent employed, and the amount of knowledge available, the result has been the most complete and lamentable failure in the artistic history of the world.

JAS. FERGUSSON.

THE ARCHITECTURAL ASSOCIATION.

THE usual meeting of members was held on Friday evening, the 6th instant, at the House in Conduit-street.

The chair was occupied by the president, Mr. Blashill.

The following gentlemen were, on ballot, elected members of the Association:—Mr. James Lemon, 10, Outwell-terrace, Stockwell; Mr. E. Parker Dew, 8A, Whitehall-place; Mr. Charles A. Peters, 2, Princes-place, Commercial-road; and Mr. G. M. Whitaker, 57, Strand.

The honorary secretary read a letter from Mr. J. P. Pritchett, honorary secretary to the Architectural Alliance, stating that all the architectural bodies represented officially at the meeting held in July last, had given in their adhesion to the alliance on the basis of the rules then definitely agreed upon. The letter further stated that the next general meeting would be held in London, in July next, and that it would be desirable that the Association should appoint delegates to attend it. The delegates from the Northern Association would bring forward a draught scale of professional charges for discussion and adoption by the alliance; and would also propose the draught of a circular to be sent to the managers of all advertised competitions, pointing out what should be the course adopted by them in respect to the remuneration offered, and the mode of adjudicating the premiums.

Mr. Rickman then read a paper on the position of measuring-surveyors in reference to the position of the architects. The question principally discussed in the paper was whether measuring-surveyors ought to be excluded from the Royal Institute of British Architects, the author contending that there was room for both.

The President observed that no doubt the by-law of the Institute excluded surveyors from becoming fellows, although they might become associates; but that in any discussion of the matter, it would be very desirable to have the actual words of the by-law before them.

Mr. Paraire was disposed to think that the subject was one upon which the Association ought not to pass any opinion until in possession of the fullest possible information. For his own part, he did not agree with Mr. Rickman that the position of the surveyor was daily rising, although he was quite ready to admit that there were a great number of gentlemen in the profession of high and deserved standing.. The great objection, however, which he entertained to admitting them to the Institute, was the necessity for drawing a line somewhere. If the surveyors were admitted because they were surveyors, how could the builder be excluded, who could allege with truth that he was a surveyor also?

The President said he apprehended that Mr. Rickman did not intend to refer to any surveyors but those who were employed by others.

Mr. Rickman said that was so. He never contemplated the admission of any surveyors but those who were understood to follow the profession of measuring surveyors only.

Mr. Paraire said he had always understood that the mission of an architect was to design, and the position of the surveyor to dissect the various trades, take out the quantities, and ascertain the expenditure under each description of work. He was, in fact, the builder's agent, although, of course, in the end, the client had to be the paymaster.

The President said, it was the duty of the proprietor to appoint a surveyor, and that in practice it was so, as the builder included in his charge the cost of taking out the quantities.

Mr. Mathews said he considered the by-law of the Institute very fair, as it did not exclude surveyors further than to make them ineligible to be Fellows. There was no objection to their becoming associates. It appeared to him that measuring surveyors had only sprung into existence of late years, as no trace of them was to be found in early times. The surveyor had by the very nature of his office to enter into such minute details that he could not be expected to be also a designer. There could be no doubt but that an architect ought to be a surveyor, but it did not at all follow that a measuring surveyor should be an architect.

Some discussion ensued in reference to the claim of builders' clerks to be considered surveyors; and Mr. Rickman stated that his experience led him to place great confidence in builders' clerks, as he generally found that they thoroughly understood their business. For his own part, he would much rather be brought into contact with an intelligent builder's clerk than with a "clerk of the works."

A vote of thanks was ultimately passed to Mr. Rickman for his paper.

The President announced that the next subject for the class of design would be a public fountain, and that on the next evening of meeting a paper "On Ventilation" would be read by Mr. G. B. New.

SOUTHERN OUTFALL WORKS.

MAIN DRAINAGE OF LONDON (SOUTH SIDE).

ON the 4th instant the corner stone of the engine-house of the southern outfall works of the main drainage of the metropolis was laid by the chief engineer of the Metropolitan Board of Works, assisted by nearly the whole body of members. The party assembled at the North Kent Terminus, London Bridge, at twelve o'clock, and proceeded to the Plumstead Station, where a special train, belonging to the contractor of the works, Mr. Wm. Webster, was in waiting to convey them across the Plumstead and Erith marshes to the site of the works at the river bank. The ride across the flat marshes was extremely pleasant and interesting; developing, as it does, the step by step taken by some previous generations to resist the stream and reclaim the foreshore of the river. We noticed three distinct embankments, similar in every re-

spect to the present river bank, that had been erected at early periods against the encroachment of the river, and to which we have before now referred. The alluvial deposit of these marshes produce abundant and highly-prized grazing land, and the Scotch and Irish cattle are brought over in thousands and turned out here to fatten.

Arriving at the works, the engineers, Mr. Bazalgette and Mr. Grant, escorted the party round the side of the reservoir, coal-sheds, culverts, boiler-house, &c., and explained the different uses intended for each. The reservoir, which is to be entirely covered with arching, but not groined, contains an area of upwards of six acres and a half, and appears to be a work of difficulty on account of the depth required to sink for a stable foundation for the piers to carry the arches. This place, when completed, will be an immense catacomb, rivalling in appearance those of Rome and Paris. Here was explained by Mr. Grant how the sewage of the whole of the south side of the river came down to this point, and was pumped up into the reservoir a height of 27 feet, and then at certain states of the tide allowed to flow into the river. Thence we descended into the foundations of the engine and boiler houses, where the corner stone was in suspension ready for final bedding. The engineer, Mr. Bazalgette, having ascended a raised platform, the ceremonial of laying the stone was commenced by one of the Board reading the parchment that had been prepared to be consigned to the vase: it contained the list of the Metropolitan Board, the names of the whole of the officers of the Board, and a general description of the works: this, with a copy of the *Times* newspaper, and the current coin of the realm, having been placed in the vase, it was laid in a cavity cut in the stone for that purpose; and the work of bedding having been performed by Mr. Bazalgette in approved Masonic style, he addressed the company, and said how delighted he felt in having now, after years of toil, arrived at a point from which the final completion of the drainage of London could be seen. This was the commencement of the end; and he trusted that when they met again it would be to open the works for the purpose intended. They were then standing under the bank of the river, and as much as 35 feet below the level of high-water. They might think that too much precaution and strength had been displayed in the timbering of this excavation; but when he stated that they had the whole weight of the embankment of the river to support, he was sure that they would readily admit the desirability of such strength. If any failure arose here, it would be worse than that of the King's Lynn catastrophe. And it reflected great credit upon the contractor, Mr. William Webster, and his agent, Mr. Matthew Jennings. The engine-house consisted in a building 154 feet by 53 feet. The engines and pumps were being constructed by the firm of James Watt & Co., Birmingham, and the contract sum was 45,000*l*. The boiler-house was 112 feet by 59 feet, and was to contain 12 boilers, each 30 feet in length, and 6 feet in diameter. These works, with the reservoir, culverts, &c., would consume over forty millions of bricks, and the contract sum was 300,000*l*.

Mr. Webster having turned the carpenter's shop into a dining-room, the company, to the number of seventy, sat down to a champagne lunch. At the conclusion, the chairman of the Metropolitan Board of Works, Mr. Thwaites, after giving the usual loyal toasts, proposed the health of the engineer-in-chief, Mr. Bazalgette. The latter gentleman, in responding, paid high compliments to the engineer of the works, Mr. John Grant, and his assistant, Mr. Frank Houghton. The Chairman, after proposing several healths, and amongst them those of Mr. Grant, who responded in appropriate terms; and of Mr. Webster the contractor (who, we find, has just obtained another contract under the Board, that of the Low-Level Sewer from Deptford to Battersea, at 235,000*l*.), left the chair; and shortly after the company took their way back to London, apparently well satisfied with the works and things in general.

SELF-SUPPORTING COOKING DEPOTS.

AN interesting and important paper was read on the 4th inst., at the Society of Arts, Adelphi, by Mr. A. Burrell, on the cooking depôts for the working classes recently established on the self-supporting principle at Glasgow and Manchester, with suggestions for introducing them into the metropolis.

The first of these establishments, for which the working classes are indebted to Mr. Thomas Corbett, of Glasgow, a merchant well known in the West of Scotland as a practical friend to the working classes, was set agoing on 21st September, 1860, in the Sailors' Home, at Glasgow. The success which attended it led Mr. Corbett to open a second branch a few weeks later, then another, and another—a new one every two months or so up to the present time; so that at this moment there are thirteen in full operation, capable of accommodating 3,000 persons at one time; employing a staff of 135 persons, consisting of one manager, one cashier, one inspector, three vanmen, and one kitchen-man, in all seven males, with 128 females, including thirteen matrons, one at each establishment, and 115 waitresses, paying an aggregate rent of 1,140*l*. per annum, disposing of penny rations of all kinds to the enormous extent of 18,000 a day, involving a gross income of 10,000*l*. a year, and, finally, frequented by no less than 8,500 persons on the average every working-day of the week. These establishments have been spread through the districts chiefly frequented by working men, two of them in premises formerly occupied as large whisky-shops.

In all of them the best materials for food and unintoxicating refreshments, such as tea and coffee, are alone used; and each ration never exceeds one penny. The actual average cost is said to be about three farthings; and the odd farthing pays all expenses and leaves a surplus.

The branches have now become so numerous as to make it absolutely necessary that a large central store and model kitchen should be erected; and arrangements are in progress for supplying this want. At the foot of Pitt-street a store and kitchen are being built, the latter of which will, Mr. Burrell says, be the largest in the kingdom. It will cover 1,000 square yards of ground, and will be 20 feet high in the interior; and it is to be fitted up with steam-cooking boilers, ten of which are in course of manufacture.

Should such commendable establishments be formed in London, it would much enliven and attract were some simple music to be played at intervals (even a good pianoforte would suffice), especially during the evenings. By means of half a dozen musicians, and good and cheap refreshments, a somewhat similar establishment, though for a higher class, was some years since set agoing in Hungerford Hall, where hundreds of young men, such as clerks, shopkeepers, and many of a much higher rank in society, soon learned to spend a temperate and pleasant evening over their tea and coffee, chocolate, ices, newspapers, quiet games of chess and drafts, &c. This establishment has since been removed to the Adelaide Gallery; and although the Middlesex magistrates have thought proper to discourage such a rival to the ginshops and beerhouses, by refusing, without any sound or sufficient reason, the music license which they had before readily granted to the Adelaide Gallery when it was a drinking-hall with naked women exhibiting in it, the present establishment is still attended of an evening by crowds of respectable people, who seem to prefer it even still to such places as the concert-rooms attached to ginshops. This well-conducted establishment, which belongs to two enterprising and sensible Italians, Messrs. Gatti & Monaco, thus demonstrates that orderly places of temperate resort, where good and cheap refreshments can be had, are formidable rivals to drinking saloons and gin-palace concert-rooms, especially when first rendered additionally attractive by a little instrumental music; and we have no doubt that the same result would soon follow with a working-class refreshment-hall got up on similar principles.

FALL OF TILE ROOF.

ON Tuesday evening, Dr. Lankester, the coroner for Central Middlesex, resumed an adjourned investigation into the circumstances which led to the death of John Parker, a labourer, who was killed by the falling of an arch into a new ice-well in course of erection for Mr. Gatti,* in New Wharf-road, Caledonian-road.

The coroner opened the proceedings by reading over the evidence adduced at the first sitting, which proved to be of a conflicting nature; but the effect of it was that Mr. Gatti employed some practical men to build an ice-well, and the roof, on the eve of completion, suddenly fell, with the deceased and two other workmen who were upon it at the time, into the well, a distance of 35 feet.

Mr. Robert Kerr, professor of architecture at King's College, said that he had examined the ice-well, and considered the cause of the accident unquestionably arose from the roof being built with four courses of tiles and cement, across 13 feet square, which would not carry their own weight. The thickness was only 3 inches, and how the men could imagine that such a roof would carry its weight, besides that of wind and snow, was beyond his comprehension. The work, so far as it went, was well done, but the accident was occasioned by an error of judgment.

Mr. William Moseley, district surveyor under the Metropolitan Buildings Act, said he received notice of the intended erection in October last. He had from time to time visited the building, and he found no breach of the Metropolitan Building Act. He thought the accident was caused by the spreading of the arches.

The Coroner summed up at length, and the Jury returned a verdict of "Accidental death," with an addendum expressive of their conviction that the deceased lost his life from an error of judgment of those with whom he was not concerned, who performed the work of constructing the roof of the ice-well. The jurors further expressed their regret that Mr. Gatti, the proprietor of the ice-well, did not employ proper and sufficient superintendence over those who were engaged to perform the work; and they also regretted that Mr. William Moseley, the district surveyor, should have allowed such a work to proceed to nearly its completion without detecting its dangerous nature.

* Not of the firm of Gatti & Monaco.

THE PAROCHIAL ASSESSMENT ACT.

AT an aggregate meeting of delegates from the various Poor Law unions of the county of Worcester, at Worcester, to consider the expediency of adopting some uniform principle in arriving at the rateable value of property, Sir John Pakington presided, and the following resolutions were adopted:—1. That the gross estimated rental of lands and houses is to be taken at such an amount as may be reasonably expected by way of rack-rent from a yearly tenant, such tenant undertaking to pay the usual tenant's rates and taxes and tithe commutation rent-charges; and that therefore existing rents and property-tax returns ought to be considered only so far as they may be useful as guides for arriving at the full actual annual value. 2. That if, in consideration of the rent thus reserved, the landlord shall have agreed to pay the tenant's rates and taxes, or shall have let his land as tithe-free, although it is in fact subject to a tithe commutation rent-charge, and the owner of such rent-charge is separately rated for the same; the amount of such rents and taxes or tithe rent-charge ought to be deducted from the rent so reserved, in order to arrive at the gross estimated rental; but when the land in respect of which such rent has been reserved is actually tithe-free, or the tithe-owner is not separately rated, no similar or equivalent deduction ought to be made. 3. That the rateable value of lands and houses is to be ascertained by deducting from the gross estimated rental the probable annual average cost of repairs, insurance, and other expenses, if any, necessary to maintain them in a state to command such rent. For this object it is desirable that the said deductions be made with uniformity throughout the county, and the following scale is recommended to the committee. First, for lands without farm-buildings, 2½ per cent.; second, for lands with farm-buildings, 7½ per cent.; third, for houses and other buildings, except cottages and mills and manufactories, 15 per cent.; fourth, for cottages, 20 per cent. 4. That in the case of tithe rent-charge the gross estimated rental should be the amount of commutation for the last preceding year, and the rateable value should be ascertained by deducting from the gross rental and tenant's rates and taxes, including tenant's property-tax, and an allowance of 10 per cent. for costs of collecting and legal expenses, and losses by default of payment, and the amount of all tenths and all other ecclesiastical dues and payments, and of insurance and repairs of any chancel to which such rent-charges may be liable, and also all payments in respect of district churches and of assistant curates whose services are required in addition to, and not in substitution for, those of the incumbent. 5. That the assessment of mills, manufactories, railways, canals, collieries, brick-yards, and other property not particularly noticed in the foregoing resolution, must be left to the discretion and judgment of the several assessment committees.

THE PRINCE CONSORT MEMORIALS.

Guernsey.—The special committee for the Prince Consort Memorial assembled at the Government office, 7th of February, for the purpose of having an interview with Mr. Durham, the sculptor, who brought with him a model of the pedestal on which he purposes to place the statue. The committee undertake to see the pedestal executed, under the professional superintendence of Mr. Le Messurier, C.E., according to plans to be settled by the sculptor, and the work to be of grey Guernsey granite. The statue itself is to be formed in copper, by Messrs. Elkington & Co.'s process. Mr. Durham agrees to land the statue in the island, and he undertakes the responsibility of

placing it on the pedestal, for the sum of 900 guineas, the committee providing the necessary gear and labour. It will be a repetition, as our readers know, of the one intended for the Memorial of the 1851 Exhibition, with permission of the Queen. Guernsey will thus have a remarkably fine statue at small cost.

Victoria Park.—A movement is on foot to erect a memorial bridge over the Regent's Canal, at Twigg Folly, near the southern entrance to Victoria Park, in lieu of the present narrow and dilapidated structure. The suggestion to call it "The Albert Memorial Bridge" has been well responded to. About 300*l.* have been collected, including a donation of 20*l.* from Miss Burdett Coutts.

Gravesend.—In commemoration of the Prince, it was determined to endow the St. Thomas's Almshouse. A fund has been raised for this purpose, but as it is a small one, it is greatly hoped that it may be increased. The trustees have caused two marble tablets to be placed on the building: one as follows is on the Windmill-street side:—"The endowment of this charity was commenced by public subscription A.D. 1862, in grateful remembrance of Albert Prince Consort, and is invested in the trustees with the hope of future contributions:" the other, in King-street, is as under:—"By the will of Henry Pinnock, dated 30th August, 1624, these houses were left for the better relief and maintenances of poor decayed persons living in the parishes of Gravesend and Milton."

Banbury.—The idea of the window to the memory of the Prince which was dedicated the other day in Christ Church, Banbury, originated with the wife of Mr. J. Fortescue, of that town, who collected 140*l.* for the purpose. The work, which is in five lights, is by Mr. Drury, and consists of figures of our Lord and the Evangelists. Under each of the latter are appropriate symbols, whilst at the foot of the centre light are the arms of the Prince quartering those of the Queen. The inscription "*In memoriam Alberti Principis Consortis Victoriæ, Britanniarum Reginæ, defuncti* 1861," runs along the bottom of the window.

Abingdon.—A project has been started to erect a statue to the memory of the late Prince Consort, either in the new recreation-ground or the Market-place at Abingdon.

Glasgow.—A meeting of the subscribers to the Prince Consort Memorial Fund was held on Tuesday in last week, in the council-chamber, the Lord Provost presiding, for the purpose of considering and approving a report by a sub-committee, as to the character of the memorial. The sub committee's report was to the effect that, at a meeting held on 5th December, it had been resolved by a large majority that the memorial should be of a statuary character, as opposed to a scheme which had been suggested of erecting some sort of public building dedicated to the memory of the Prince. Principal Barclay moved that this resolution of the sub-committee be approved of, and that it be remitted to the sub-committee to fix a site, employ an artist, and generally to carry out the objects of the subscribers. Mr. Robert Stewart seconded the motion. Sir James Anderson and Mr. D. C. Rait advocated the idea of a public building, but no counter proposition was made, and the motion was carried without a vote.

GAS.

THE bad quality, high price, and deficient quantity of the gas supplied by the Maidenhead Gas Company having been much complained of, a meeting of gas consumers has been held on the subject. The meeting was addressed by Mr. T. Atkins, civil and gas engineer, who stated that he had had much experience in lighting upwards of fifty towns with gas, all from 1,000 to 15,000 inhabitants, and had endeavoured to make gas works not only paying undertakings, but the medium for promoting rational and civilizing influences, and for dispensing comfort. As for Maidenhead, he regretted to say there was a dereliction of duty and a short-sightedness on the part of the old company. He cited half a dozen towns of a like size to Maidenhead, where he had been called in to erect new gas works, all of which had ended in the price of gas being reduced, the consumption extended, and the dividends increased, in some cases from almost zero to 8, 9, and 10 per cent. The commercial policy to be pursued in gas works, he remarked, is to manufacture largely and easily, and supply extensively and at a cheap rate. The terms required by the consumers were a reduction from 6s. 6d. to 5s. per 1,000 cubic feet. In Chepstow, with a population of only 3,500 persons, he had put up new works, at a cost of 6,000*l.*, and had reduced the price of gas from 10s. to 4s. Though both the old and new company still carry on business, both pay a per centage, the new company paying 6 per cent. At Barnet, the rental had been increased from 200*l.* to 1,600*l.* per annum, the old company had been bought up for a large sum, and the price of gas had been reduced from 10s. to 5s. per 1,000 cubic feet. At High Wycombe, the price had been reduced from 15s. to 6s., and the old company's works purchased. In each of these cases a dividend of from 6 to 10 per cent. had been paid. At Dartmouth, with new works at 3,500*l.*, the gas was lowered to 5s., 1,200*l.* paid for the old works, and a similar dividend paid. All these were the results of cheap gas and free trade in gas fittings. Companies stood in their own light by maintaining high prices for gas, and a monopoly of fittings. The nucleus of a Maidenhead consumers' deputation was formed at the meeting.——The Worcester Gas Company have declared a dividend of 10 per cent. for the past half-year.——The Chester United Gaslight Company have also declared a dividend at the rate of 10 per cent.: they have reduced the price of their gas so far by granting 2½ per cent. discount on speedy payment.——A dividend of 8 per cent. has been declared by the Stoke, Fenton, and Longton Gas Company, whose directors congratulate them on the success of their operations, and state that an enlargement of their works has become necessary.——A dividend of 6 per cent. has been declared by the Collingham Gas Company, besides a reserve; and the directors state that the consumption of their gas has considerably increased.——The Crowle Gas and Coke Company have declared a dividend of 10 per cent., leaving a balance on hand.——The Manchester Gas Committee have recommended the following reduced scale of charges in the townships beyond the city on the near side of the Mersey, viz.:—When the quarterly consumption is under 500,000 cubic feet, 4s. 3d. per 1,000; 500,000 and under 1,000,000, 4s. 2d.; 1,000,000 and under 1,500,000, 4s. 1d.; 1,500,000 and upwards, 4s. In the district beyond the Mersey, they recommended that the present price, 4s. 6d. per 1,000 cubic feet, should be continued. It was estimated that the reduction would at the present time amount to 800*l.* per annum. The report was adopted.——The Alnwick Gas Company have just declared a dividend of 10 per cent. for the past year, and resolved to reduce the price of gas 6d. per 1,000 cubic feet, making it 5s. per 1,000.

THE TENDERS FOR CARMARTHEN LUNATIC ASYLUM.

THE following is a list of the tenders for Carmarthen Lunatic Asylum. Thirty-two firms sent in offers, ranging from 24,950*l.* up to 45,944*l.*, and this with quantities supplied! Mr. David Brandon is the architect. The quantities were supplied by Messrs. Williams & Schofield, and Messrs. J. C. & E. Lansdowne:—

Somers	£45,944	0	0
Thomas	39,650	0	0
Foster	36,848	9	0
Douglas & Co.	35,221	13	7
Williams	34,399	0	0
Moore	34,111	0	0
James & Price	34,100	0	0
Jones & Johns	33,650	0	0
Tregrema	33,000	0	0
Simms	32,636	0	0
Simpson	32,150	0	0
Jenkins & Hallett	31,999	0	0
Myers & Sons	31,849	0	0
Griffith & Thomas	31,665	17	0
Watkins & Jenkins	31,570	0	0
Howell & Morgan	31,133	0	0
Hughes	31,000	0	0
Conder	30,9 0	0	0
Yerward	30,380	0	0
Roberts	30,340	0	0
Ward, Ansill, & Co.	30,150	0	0
Davies & Son	29,910	0	0
Scrivener & White	29,900	0	0
Webb	29,400	0	0
Lewis	29,200	0	0
Simpson	28,784	0	0
Barnsley & Son	28,180	0	0
Jones & Son	28,000	0	0
Piper & Wheeler	26,950	0	0
Longmire & Burge	26,134	0	0
Warburton	25,760	0	0
Pollard, Taunton (accepted)	24,950	0	0

THE NORTHAMPTON SURVEYORSHIP.—At last week's meeting of council, Mr. William Law was proposed as surveyor to the corporation. Mr. Vernon proposed that Mr. Hull be appointed in the room of his father. The two motions being put to the council, Mr. W. Law was elected by a majority of 11 to 5.

VENTILATION OF HOUSES.

THE following notes were prepared by me previously to the discussion at the Institute on Monday last, on the subject of "Ventilation," intending to take part therein: as, however, the opportunity did not occur, and since the meeting has been adjourned, I beg to forward them to you to notice (if you should think them of sufficient interest), prior to the resumption of the discussion.

Attention to a few very simple rules would do much to achieve the result so devoutly to be wished, viz, the proper ventilation of our dwellings.

Every window should be proportioned to the size of the room; and, if possible, be opposite a second window; but the last is rarely attainable in ordinary dwelling-houses, and might not be desirable if it were, on other grounds. All windows should rise to within a foot of the ceiling, and be made to open at the top and at the bottom, so that by opening the doors and windows the room may be flushed with fresh air, and in a few minutes rendered perfectly sweet; and even if the doors are closed, the opening of both upper and lower sashes will produce an inward and an outward draught. But windows should not be alone depended upon, since they can only occasionally be employed, when the room is unoccupied.

External fresh air should be admitted by a tube to a chamber behind the stove, where it may be warmed before entering the room, to feed the fire and the occupants with fresh air, without drawing the atmosphere in draughts through the cracks of the doors and windows, the draughts from which are increased in proportion to the absence of other means of replacing the air exhausted in respiration and the combustion of fuel, &c. The outlet from this air-chamber may be through ornamental fretwork in the stove front. In winter, or at night, and especially if there are gaslights, it will be specially important to provide a ready means of releasing the impure air, without necessitating its being drawn down to the low level of the fireplace, to escape by the chimney-shaft when the windows are closed. For this purpose the chimney-flues should be constructed in duplicate; that is to say, each room should have two flues 9 inches square, each divided by a thin plate of iron only, instead of the usual half-brick withe (similar to those invented by Mr. Boyd): one of these flues will be for the smoke, the other for vitiated air. The opening into the latter from the room should be of the same area as the flue itself, and be situate immediately below the cornice of the room near the ceiling, and provided with a means of opening and closing. (Dr. Arnott's valves are the best. The cause of their smoking sometimes arises from the absence of a sufficient quantity of fresh air in the apartment, and also from the wideness of the chimney throat.) The heat of the adjoining flue would cause a sufficient rarefraction of the air to create an upward draught in the flue, and thus the vitiated air would be drawn off from the apartment. To prevent down-draught drawing smoke into the air-flue at the point of exit, the latter should open at the side of the chimney-stack, while the smoke-flue should pass up in the usual manner and escape at the top of the chimney-stack. (The writer has successfully introduced these arrangements in buildings erected by him; and, besides the fresh air supply to the stove, has also admitted air from the hall, through apertures contrived over the head, and under the discharging arch of the door.)

The kind of stoves employed may be those manufactured by Messrs. Boyd, Kennard, and others. And Mr. Billing's throttle valves and terminals will be an advantageous addition, especially in windy weather.

Some cross ventilation by opposite windows should exist in every house, if not in the several rooms, at least in the stairs and landings with which the rooms communicate; so that by opening the room-doors a direct current of air may be maintained at pleasure between the windows of the rooms and the stairs. No house can be considered healthy where reservoirs of stagnant air are permitted to exist.

A false economy commonly incloses the upper stories of staircases between back and front dressing-rooms or closets, so that that portion where the heated and impure air naturally rises is the very part for which no means of ventilation are provided; and should the necessity for light enforce a skylight, it is ten chances to one that any means of opening or closing, or apertures for ventilation, are provided. The trap-door to the roof if fitted with perforated zinc might be of some value, but is never so employed, and the roof has no current of air specially provided to assist the escape of such vapours.

Wherever gas is burning fresh and foul air-shafts are required, especially in shops, and not only for the sake of ventilation, but for the increase of light by the more abundant supply of oxygen to aid combustion;—in proportion to the purity of the atmosphere is the brilliancy of the light.

A simple window is insufficient to ventilate a water-closet or lavatory, &c.; and if no cross ventilation can be gained by opposite windows, draught may be secured by external ventilators in direct communication with the closet, or through tubes from perforated zinc-covered openings in ceiling. If this cannot be done, it is better to hang the casement on pivots in the centre than on hinges, the windows being placed as high as possible.

The soil-drains will also require to be ventilated by external shafts, or they will often ventilate themselves with the dwelling. Every other entrance to the drains to be water-trapped.

In larger rooms a greater amount of fresh air will be required than can be admitted through the chamber at the back of the fire; and the point chosen for the admission of the fresh air should always be situate opposite a foul-air shaft of equal area and near the ceiling, or the draught towards the fire will be objected to; and a due proportion should be observed between the admission and dismission of air and the size of the room to be dealt with. Thus, a foul air-shaft 9 inches by 9 inches will answer for a room containing 5,000 cubic feet. Where cold air is admitted at the ground it chills the feet, and makes the coldest part of the room cooler, and rarely rises higher than the fire.

It should be borne in mind that upon the height of the upshaft and the proper influx of fresh air will greatly depend the strength of the draught upward when the air in the shaft is at a low temperature; but if no fresh air is otherwise admitted, the foul-air exit shaft becomes a fresh-air admission flue in the absence of fires to warm the adjoining smoke-flues.

The less horizontal tubing for the conveyance of foul air the better, unless fresh air is admitted at one end and a heated flue receives it at the other. In that case the vitiated air is drawn along by the current as it enters by the perforations beneath the horizontal shaft; but to be of any use they must be very large if of much length. Mr. Kite's ventilators have been successfully used by the writer to produce an upward draught. Mr. Watson's ventilators answer best where no other means of admitting air has been provided. A stable at night when all doors are closed is usually well ventilated by one of these, or Mr. Muir's four-point ventilators. EDWD. C. ROBINS.

OUR THOROUGHFARES.

THE opening of the South-Eastern Railway terminus at Hungerford will have the effect of greatly increasing the amount of traffic in West Strand, and the want of some means of exit in a direction due north from this *locale* will be enormously increased.

Your voice is always foremost in pointing out these deficiencies in our means of intercommunication, and I remember that you long ago pointed out the urgent need of an improvement by widening and straightening the route from the Strand to Piccadilly by King William-street, Chandos-street, and Hemming's-row. This will be the natural course for all vehicles desiring to reach the West-end from the City, avoiding the concourse which the new station will occasion, and a great improvement would be effected by making two diagonal openings through the centre of Leicester-square. The four triangular portions might be planted and laid open in a similar manner to some of the *places* in Paris.

More than this, however, will be required. From the part of Oxford-street, between the Circus and Tottenham-court-road, there is no communication with Charing-cross, except the narrow and tortuous defile of Wardour-street, Princes-street, and Dorset-place. A more direct and convenient route might be opened at a comparatively small cost.

An opening from Pall-mall East, close to the western end of the National Gallery, as before now urged in your pages, would take us into St. Martin's-street. The exit from this street into Leicester-square would require the removal of one house. At the north-western corner of Leicester-square is Leicester-street. There is only a small space required,—say two or four houses to be taken down,—to give access to the lower end of Dean-street (called, I think, Macclesfield-street); and by widening the outlet of Dean-street into Oxford-street, we should obtain a route tolerably straight and more direct than any existing thoroughfare in the same direction.

T. S. W.

THICK AND THIN JOINTS.

AT page 147 of M. Viollet le Duc's last published volume of the "Dictionnaire Raisonné" is the following passage:—"En principe, du moment qu'on ne peut poser les pierres absolument jointives, comme le faissaient les Grecs et même les Romains lorsqu'ils employaient le grand appareil, *mieux vaut un joint épais qu'un joint mince.*"

I should be pleased to see this remarkable dictum discussed by practical men in your pages.

I, in my limited experience, have been accustomed to hear admired the wonderfully *thin* joints of the ashlaring of many of our best Mediæval works; but here comes one of the great authorities, who insists on our admiring the *thick* joints of many Mediæval works. This thick and thin admiration puzzles the humble student, and it would be a blessing to us if some undoubted Don would tell us once for all whether we are to lay it on thick or thin. A STUDENT.

GOVERNMENT ENGINEERS, INDIA.

SIR,—With reference to a letter which I addressed to you about a month ago, pointing out the deceptive character of the Engineer appointments in the Public Works Department of India, annually thrown open to competition, I now beg to forward to you copies of letters which have appeared in the leading paper, *The Friend of India*, in corroboration of my statements. Whether you have published my former letter or not I do not know,* but I hope so, as it may perhaps save others from taking a step they will most assuredly repent bitterly when it is too late.

I can state from my own knowledge that nearly every one of my batch is anxiously looking out for an opportunity of leaving the department at any cost, so miserable are our prospects. There is no chance of getting any redress out here: our only hope lies in the powerful aid of the English press; and we look to you, as the leading professional paper, to show your usual alacrity in exposing abuses. A VICTIM.

Simla.

THE ARCHITECTURAL ASSOCIATION AND THE VOLUNTARY EXAMINATIONS OF THE INSTITUTE.

SIR,—The list of candidates successful in the class of proficiency at the first voluntary examination having been made public, allow me to draw the attention of your readers to the fact that seven of the eight students who passed being from London, five of those seven belong to the Architectural Association, and of the remaining two, one stands proposed for election.

This fact is very gratifying to those who take an interest in the Association. It shows that that body has among it a large proportion of those who thus stand accredited as the foremost architectural students of the day; and it shows, also, that the studies of our class of design and the proceedings at our ordinary meetings, have had their due result in helping to fit members thus to to take a position honourable alike to themselves and to the body with which they are connected.

I hope the result will be to attract to that body many of the architectural students who are preparing themselves for next year's examination. T. R. S.

PROCEEDINGS UNDER METROPOLIS BUILDING ACT.

AT the Wandsworth Police-court, on the 4th inst., Mr. J. McLachlan, builder, was summoned before Mr. Dayman for neglecting to give to Mr. Hiscocks, the district surveyor of Wandsworth and Tooting, notice in respect of certain works done by him at Mr. Barnet's, Wandsworth Common. The defendant pleaded guilty to not giving notice, but excused himself on the ground that he considered the building exempt from the operation of the Act, in consequence of its distance from any other building. The district surveyor said the building was not more than 15 feet distant from some other buildings in the same occupation.

Mr. Dayman was clearly of opinion that notice should have been given. Similar cases had been brought before him and thoroughly argued. The Act said the building to be exempt must be 30 feet from any building: if it meant those of an adjoining owner, it would have been from the buildings or ground, instead of "any other buildings and ground of any adjoining owner." When Messrs. Watney were summoned in a similar case, he had decided in the same way, and offered to give them a case for a superior court, but they refused, as they were quite satisfied as to their liability.

The district surveyor said he did not wish to press for penalty in this case; whereupon the magistrate ordered a nominal fine with costs, and notice to be sent.

* Vol. xx. p. 932.

Miscellanea.

ELECTRO-TELEGRAPHIC PROGRESS.—A new step in telegraphy is about to be made in the port of Liverpool. The lightships which lie off the harbour will be furnished with dials and wires to communicate with the shore.

MCINTOSH *v.* THE GREAT WESTERN RAILWAY. The statement contained in the paragraph respecting McIntosh *v.* The Great Western Railway, to which we gave insertion, has received the following explanation in the *Times*:—"It appears that the suit, McIntosh *v.* The Great Western Railway Company, alluded to yesterday, was originally instituted in Vice-Chancellor Stuart's Court, to establish a claim for 280,000*l.*, of which sum 80,000*l.* is certified by Mr. Peake, his chief clerk, to be due to the plaintiff, with interest, from about 1839. In connexion with this question, 76,000*l.* have been uniformly admitted in the company's accounts as a contingent liability, under the head of 'outstanding and unsettled claims.' The other suit, which is still pending, involves a further claim of 16,000*l.*" It is believed that the certified amount is still subject to rectification and possible reduction.

IRRIGATION AND CANAL WORKS IN INDIA.—A contract has just been executed by the Governor-General of India and the East India Irrigation and Canal Company for the construction of their scheme of works in Orissa, and the adjacent districts towards Calcutta. This is the first instance in which clauses of arbitration have formed part of the contract between the Government of India and a private company. The plans and estimates of a canal from the Hooghly to Balasore, 95 miles in length, are now complete, and its construction has been or is about to be immediately entered upon. The Government view this line from Calcutta to Balasore as one of great importance, and express a strong wish for its completion as quickly as possible, so that there is every probability of the work progressing very rapidly, especially as the introduction into Balasore of salt from Liverpool has broken up the manufacture of that article in the locality, and has materially increased the supply of labour for the company's operations.

ACCIDENTS.—At the Bishop's-road Bridge, Paddington, the flooring of one of the repositories of coal recently gave way, when the immense weight of coals (estimated at fifty tons) fell down on three men at work underneath, crushing them in a frightful manner. They were removed dead, and another man lies without the slightest hope of recovery.——The interior walls of a dilapidated house in High-street, Oxford, have fallen: it was about to be pulled down.——The wall of a newly-built cottage in Friar-street, Worcester, was observed to be cracked, and shortly after the building fell bodily. The foundations had been undermined by excavations connected with further building operations.——The Gloucester Steam Mills, at Gloucester, were recently burnt, and a gust of wind has suddenly thrown down one end of the main building, killing a woman and child. The coroner's jury censured those concerned for the dilatory and inefficient way in which the demolition was being carried on.——The roof of Nelson's Monument, on the Calton-hill at Edinburgh, lately took fire, it is believed from a stroke of lightning, but not much damage was done.

RAILWAY ACCIDENT.—A serious accident has happened on the Bow Extension of the Blackwall railway. This section of the line from the Stepney junction to where it joins the North London, is formed on brick arches some 25 feet above the ground. As a train of upturned trucks, in great confusion, were carried along on the occasion referred to, they came with a fearful crash against the coping or wall of the line, and carried away a large portion of the brickwork. Some of the trucks were toppled over and crushed and overhanging the parapet, and the line and road beneath were scattered with the contents of the waggons—cheese, flour, and other merchandise. The permanent way was torn up in sad havoc, and a heavy piece of brickwork at the Bow Common-bridge, where a line of rails runs in, was shivered by one of the trucks which had dashed against it. In another part of the coping a couple of truck wheels, with the axle entire, had been forced through the brickwork of the wall, and fell into the road beneath. The coping up to the Regent Canal-bridge appears to have been torn away by the waggons as they were hurled along, but the bridge does not seem to have sustained any damage. A large portion of the damaged brickwork will have to be entirely restored. No one was seriously hurt.

COMPETITION DESIGNS FOR FLORENCE CATHEDRAL.—Forty-five designs for completing the façade of the Duomo of Florence were sent in by forty-two competitors, and have been publicly exhibited. Three or four of the designs are understood to be by English architects.

THE VOLUNTARY ARCHITECTURAL EXAMINATIONS.—It is understood that the following gentlemen have passed in the class of proficiency:—Messrs. David Ebenezer Gostling, Robert Ovenden Harris, George Tunstal Redmayne, Lacy W. Ridge, Richard Phèné Spiers, Henry Stone, Thomas Henry Watson, Edward Wimbridge. It is stated that there were 19 candidates. No examination was held in the class of "Distinction."

BARBER SURGEONS' HALL.—Mr. Shoppee, architect of the Company, writes as follows:—With reference to the paragraph in your last number, I beg to inform you that in the conditions for letting the portion of the Company's Monkwell-street estate, care is taken that every object of architectural and antiquarian interest shall be preserved for re-using in the remaining portion of the buildings. The large hall is not required to be taken down, as without alteration to the fabric it is available for warehouse purposes. The court-room and other interesting portions of the present structure will not be interfered with by the proposed new buildings, but will remain for use as the Company's hall. The carved doorway to which you refer is intended to be refixed in the court-yard as the entrance to the hall.

INSTITUTION OF MECHANICAL ENGINEERS.—The sixteenth annual meeting of the members of this institution was held on the 26th ult., Mr. Charles F. Beyer, vice-president, in the chair. From the annual report of the council, it appeared that the institution was in a very prosperous condition; its number of members having during the year been considerably augmented. Mr. Robert Napier was elected president for the ensuing year. Two papers were read to the meeting, the first on a "Description of the Apparatus used for Sinking Piers for Iron Railway Bridges in India," by Mr. Joseph F. Strong, of Allahabad; and the other "On a Type-composing and Distributing Machine," by Mr. William H. Mitchell, of London. A number of members and their friends assembled in the evening and celebrated the anniversary by a dinner.

RAILWAY MATTERS.—The report of the Victoria Station directors states that the expenditure upon the station construction account since the last report amounts to 22,500*l.* There remain to be expended but 7,198*l.* to complete the 105,000*l.*, to which this company's outlay on the station is limited by the agreement with the London, Chatham, and Dover, and Great Western Companies. The traffic upon the line has increased beyond all expectation; and the difficulty experienced by the Brighton and Chatham and Dover Companies in meeting the requirements of the public has led to the deposit of plans and to the introduction of Bills by both of these companies in the present session, for the purpose of widening the line, and increasing the existing station accommodation.——The traffic receipts of railways in the United Kingdom amounted, for the week ending the 31st of January, on 10,588 miles, to 501,040*l.*, and for the corresponding week of last year, on 10,217 miles, to 471,230*l.*, showing an increase of 371 miles, and of 29,810*l.* in the receipts.——The Roman and Neapolitan Railway was expected to be opened for public traffic on the 15th of February.

ROMAN HOUSE ON SITE OF THE INDIA HOUSE. Recently at a meeting of the British Archæological Association Mr. T. Wright reported that he had visited the works of demolition on the site of the late East India House, where, in digging up the foundations, the workmen had come upon the floor and walls of a Roman house, the floor lying at a depth of nearly 20 feet below the level of the modern street. An outside wall ran nearly under the edge of the present street and parallel with it, and a transverse wall ran from it at right angles in the opposite direction to the street; and this latter wall was traced to a distance of perhaps 20 feet, when it met with another wall parallel with the former. The length of the room has not been ascertained, but it was evidently much greater than its breadth. The floor was in perfect preservation, and was formed of tesseræ of about a quarter of an inch square, black, white, and red, but arranged in no very intelligible pattern. The walls, which were 2 feet thick, remained on one side to a height of between 3 and 4 feet, and the stucco and fresco painting on the inner surface were unbroken. It appeared to have been painted in panels, with a rather rude pattern.

NEWS FROM STOCKHOLM.—The first stone will soon be laid of the new English Episcopal Church in Stockholm. It is to be in the English Gothic style, 80 feet long and 40 feet broad. The outside will be of dressed sandstone, but the interior will be faced with Swedish marble.

PASTORAL STAFF OF THE BISHOP OF CENTRAL AFRICA.—The pastoral staff for the Bishop of Central Africa, Dr. Tozer, recently consecrated, has been made by Mr. Keith, from the design of Mr. R. J. Withers, and is an elegant production. The head is of ivory and silver (gilt), and the staff of ebony. Forty carbuncles and a diamond adorn it. The cost, irrespective of the diamond, which was a separate gift, was about 150*l.*

WANT OF DRAINAGE IN RUSHOLME, MANCHESTER.—A deputation recently presented a petition to the Rusholme Board of Health, complaining of the want of drainage. The board explained that the great difficulty was to adopt a plan that would not be unbearably expensive to the ratepayers. They had had plans and sections, and levellings taken, and they had sent deputations to London; and the only result they had arrived at was, that the drainage could be thoroughly effected, but not without great cost. They hoped that in a short time they would find an easy solution of their difficulty.

THE DESTRUCTION OF THE THEATRE ROYAL, GLASGOW.—The ruins of this building have been inspected by Messrs. Baird & Neilson, who report that a portion of the walls was in an insecure state, and would require to be taken down immediately. No fewer than 136 persons were employed in the theatre, all of whom have been thrown idle by the catastrophe; and many of them have lost dresses and musical instruments. Mr. Houghton, the manager, has made arrangements for the opening of the Prince's Theatre, which recently underwent a thorough repair.

STRIKE AT WINDSOR CASTLE.—The carpenters, seventy or eighty in number, employed by Messrs. Myers & Son, the contractors for building the temporary saloons at the west end of St. George's Chapel, for the reception and accommodation of his Royal Highness the Prince of Wales and the Princess Alexandra, and personages who will attend the marriage ceremony, struck on Monday last, on the ground that they had been paid at the rate of 4s. 2d. *per diem*, whereas the Windsor master-carpenters were paying their regular men more money. They have since resumed work, the contractors having agreed to the terms required, namely, 4s. 6d. per day of ten hours, instead of 4s. 2d., the sum they had been previously paid.

STATE OF SPIRE OF ST. LAWRENCE'S CHURCH, SOUTHAMPTON.—At a vestry meeting, the architect, Mr. Bedborough, explained that the rod had become bent by the wind, in consequence of the accidental fixture of the cock; and one of the stays had become loosened; but that the spire and all connected with it had been built in a workmanlike manner, and was perfectly safe. The removal of the cock and the straightening of the rod were requisite, the vane being left to indicate the direction of the wind. After some discussion, in course of which an opinion was generally expressed that the architect was not to blame, the vestry authorized the churchwardens to procure from Mr. Frith an estimate of the cost of performing the work required to be done.

THE INVENTORS' INSTITUTE.—The Patent Law committee of this institute have reported to the institute on the subject of the Patent Law. As to the duration of patent rights they say:—"We strongly recommend that the attention of the Legislature should be called to the comparatively short time for which patents for inventions are granted, and to the injustice thereby occasioned to inventors. A fourteen years' patent right is surely a somewhat niggardly encouragement to inventors; since, during so short a period, few inventors are enabled to obtain anything like fair remuneration for the labour and skill required for practically developing and perfecting new inventions. A large outlay of capital, moreover, is usually necessary to bring an invention into general public use; but such an outlay is seldom justifiable, seeing that at the expiration of so short a time any person can step in and reap the benefit of whatever demand the expenditure of capital may have created. Hence, the labours of the poorer class of inventors are often fruitless." The committee is of opinion that the term of patent right should not be less than twenty-one years. A meeting of this institute was held at their offices, in the Polytechnic, Regent-street, on the 9th instant, to consider the working of the laws relating to patents for inventions, and the measures to be taken in defending the rights of inventors.

PROFESSOR SMIRKE'S LECTURES AT THE ROYAL ACADEMY.—On the 5th inst., Professor Smirke delivered an interesting lecture on Arcades, the last of his course. We shall give it *in extenso* next week.

TRAMWAYS.—The Potteries Street Railway Company declared, last Monday, a dividend of 2½ per cent. per annum. During the year 152,290 persons had travelled in the cars.

THE HARTLEY COLLIERY ACCIDENT.—According to a letter from the secretary of the Hartley Colliery Relief Fund, 70,000*l.* subscribed for the Hartley sufferers are safely invested in available securities; 5,500*l.* are in the bank; and 5,500*l.* have been distributed. What is to be done with this very handsome fund? It is not to be devoted to Hartley Colliery accidents alone, is it?

OXFORD WORKHOUSE: CLERK OF WORKS.—Fifty-four applications were received for the office of clerk of works, besides fifteen too late. The list was ultimately reduced to three, and the building committee recommended one of these, Mr. Joshua Walker, who had been employed as clerk of the works at the Birmingham workhouse, to the vacant office. An amendment was made to the effect, that Mr. John Castle, the clerk of the works at the Oxford Corn Exchange, be appointed. Mr. Walker, however, was appointed by a majority of 11 to 5.

DOVER.—On Thursday evening last Earl Stanhope was to lay before the Society of Antiquaries the correspondence which has taken place between the society and the Admiralty on the subject of the tides off the Straits of Dover, with a view to determine the place where Cæsar landed on our shores. The Admiralty have for some months been engaged, at the instance of the Society of Antiquaries, in taking observations on this matter, and their report will also be laid before the meeting.——A provincial paper mentions that what was once known as Shakspeare's Cliff, tunnelled some time ago, as all know, for a railway, has quietly glided into the sea.

TENDERS.

For taking down and rebuilding on an adjoining site the temporary church of St. George, Tufnell Park, Holloway. Mr. George Truefitt, architect:—

Longmire & Burge	£375 0 0
Allen	350 0 0
Waters	349 0 0
James & Ashton	334 0 0
Carter	297 10 0

For alterations and repairs to house, warehouse, &c., No. 52, St. Mary Axe, for Mr. Lazarus. Mr. J. Clarke, architect:—

Coleman	£420 0 0
King	386 0 0
Hardiman & Sandon	373 0 0
Wallis	303 18 0

For stoves, for the Stepney Union. Mr. Jarvis, architect:—

Boyd	£187 0 0
Caston	185 0 0
Wills	158 0 0
Hill	153 0 0
Deane & Co.	149 0 0
Fire Grate and Ventilation Co.	145 0 0
Hayward, Brothers	140 0 0
Evans & Co.	125 0 0

For house and lodge, to be erected upon the Hartnell Estate, Burlaston, Staffordshire. Mr. J. Stevens, architect. Quantities supplied by the architect:—

	House.	Lodge.
Lovatt	£4,000	£290
Collin & Hudson	3,998	254
Espley	3,793	312
Robinson	3,600	300
Young	3,595	280
Bullock & Barton	3,536	284
Terrar	3,535	328
Mathews	3,520	271
Harley & Dean	3,500	270
Ratcliffe & Son (accepted)	3,395	269

The above tenders are exclusive of a great portion of the materials.

TO CORRESPONDENTS.

Cast-iron Columns.—A correspondent writes,—I should feel obliged if any of your correspondents would inform me of the formula for calculating the dimensions of hollow cast-iron columns, above the table given in the "Engineer's Almanac," which takes only to 100 tons,—18 inches diameter,—1½-inch metal. I cannot find it explained in "Tredgold."

J. W.—R. R. B.—A Workman (shall be thought of).—An Irish Architect.—Shamrock.—Competitor.—W. A.—D.—R. D.—A. F. (shall appear).—H. de M.—Messrs. O'C. (always glad to receive correct information).—P. C.—H. H. (a simple valve where the pipe enters the chimney would prevent return of the smoke).—A. B. C. (we have not much confidence in *gas* tar as a preservative of wood).—R. A.—F. J.—A. L.—Messrs. L.—E. W. (send sketch and we will reply).—J. D. (ditto).—E. H.—L. & S.—J. P. S.—B.—Rev. A. B. (see letter in present number).—H. H. C.—E. T. B.—J. S.—J. J. (shall appear).—A. J. H.—F. T. D.

We are compelled to decline pointing out books, and giving addresses.

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender; not necessarily for publication.

NOTE.—*The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.*